

Psychological Benefits of One-to-one Marketing in Apparel E-commerce: An Approach with Perceived Usefulness, Pleasure, Arousal, and Attitude toward the E-store

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Abstract

Wide-spread practitioner literature exists for the one-to-one marketing effect from a firm's perspective; however, limited research discusses the psychological effect of one-to-one marketing from a consumer's perspective. The authors test a model that integrates the level of consumer-perceived one-to-one marketing effort (OTO-E), instrumental (i.e., perceived usefulness) and affective benefits (i.e., pleasure and arousal), and attitude toward the e-store (ATE). The analysis of an online survey (conducted with 195 U.S. undergraduates) confirms the positive effect of level of OTO-E on the benefits that influence ATE. In addition, it reveals the positive effect of the affective benefits on the instrumental benefit. The results expand the current research on the value of one-to-one marketing by presenting a consumer-oriented approach. As the study was conducted in the U.S. market with intense consumer demands for individuation of service, the results should provide useful managerial/ theoretical implications to Korean apparel e-tailers, concerning their future implementation of one-to-one marketing.

Key words: One-to-one marketing, Usefulness, Pleasure, Arousal, Attitude toward e-store

I. Introduction

For the past decade, the crucial role of service/product individuation in building positive consumer-company relationships has gained strong managerial and academic supports (e.g., Peppers & Rogers, 1993). Growing interest concerning the topic has brought the "one-to-one marketing" regarding products, services, and communications, into a promising position in marketing practice and theory (Ball et al., 2006; Franke et al., 2009). Central to one-to-one marketing is the tailoring of a firm's marketing mix to the individual customer (Arora et al., 2008). Stimulated by the strong arguments by marketing scientists concerning its high return for firms, a number of e-tailers already have

employed various forms of marketing tactics to individualize customers in an increasing manner (Arora et al., 2008; Simonson, 2005). However, despite the strong conceptual consensus regarding its great potential in the market, little empirical evidence has appeared in the current marketing literature concerning the effective measurement and estimation of its effect, particularly from the consumers' perspective (Lee & Park, 2009; Vesanen, 2007).

Understanding the effect of one-to-one marketing from the consumers' perspective is highly crucial for e-tailers to estimate their managerial investment to the marketing, as there stands an imperative gap between marketers' intention and consumers' interpretation (Simonson, 2005). Accordingly, implementation of one-to-one marketing should be based on an understanding of how consumers perceive such strategic efforts (Simonson, 2005). Lining with this notion,

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recent studies have indicated the critical discrepancy between a firm's intention and consumers' interpretation, and in some cases, investment in attempting to value customers may even result in reduction of consumers' satisfaction with and patronage concerning the firm (e.g., White et al., 2008). In fact, however, consumer research on the effect of one-to-one marketing has just begun illuminated; most prior work on this topic has addressed one-to-one marketing's value from the firm's perspective, and estimated what implementation of the related strategies would benefit the firms greater, in terms of consumer response rates and/or revenue (Ansari & Mela, 2003; Dellaert & Stremersch, 2005). More recent work starts to address the positive relationship between one-to-one marketing and consumers' patronage intentions (e.g., Ball et al., 2006; Srinivasan et al., 2002). Yet still, little research exists regarding psychological mechanisms underlying the effect of one-to-one marketing on consumer. Accordingly, there arise calls to investigate the viable psychological benefits derived from various strategies to individualize customers in specific (e.g., Simonson, 2005; Vesanen, 2007), and from consumer-empowering marketing tactics in general (Fuchs, 2010).

Despite the extensive evidence in the marketing literature concerning the crucial psychological effect of one-to-one marketing in a conventional service encounter (e.g., Mittal & Lassar, 1996; Suprenant & Solomon, 1987), a firm's effort for individualizing customers should yield certain psychological merits leading to positive attitudinal and/or behavioral responses. In specific, one-to-one marketing should be more important in developing a close firm-consumer relationship in apparel e-commerce, from the reasons as follows; first, the topic should be of higher importance for apparel companies, as the unique characteristics of apparel category demands much more tangible information and personal contact in its pre-purchase situation than other products, and therefore is expected to reveal the influence of firm's relationship building strategies (Kaiser, 1983; Miller-spillman et al., 2005). Secondly, apparel is one of the most frequently purchased items through online shopping ("The State", 2010). Given its great potential, findings of this study will be useful particularly for apparel e-stores that

aim to develop close and intimate customer-firm relationships on the web. However, the topic has not been much discussed in the literature, and there exists little guidance with regard to the actual service management for apparel e-tailers.

The objective of this research is to understand potential of technology-based one-to-one marketing from the consumers' perspective, within the context of apparel e-commerce. Specifically, based on the prior literature of relationship marketing (e.g., Yoon et al., 2008), the role of affect in retail settings (e.g., Donovan & Rossiter, 1982), and technology-based activities (e.g., Childers et al., 2001), this study sets out to explore psychological benefits of one-to-one marketing, in relation to instrumental (i.e., perceived usefulness) and affective benefits (i.e., pleasure and arousal), and attitude toward the e-store. Estimating the consumer-perceived level of a firm's investment into individuating customers is highly important, as it is expected to be relevant to positive benefits intervening effect of the marketing tactics on consumer (Fuchs, 2010; Simonson, 2005). Findings of this study will contribute to the current literature of one-to-one marketing in specific, and relationship marketing in general, by illuminating a consumer-centric approach in estimating its operational value. In a broader sense, this will expand the current understanding of psychological effect of consumer-empowering strategies (Fuchs, 2010). Managerially, the findings will lead to a more efficient way of optimizing characteristics of one-to-one marketing, providing useful guidelines for marketing scientists in designing and actualizing quality e-shopping experiences in apparel e-commerce (Mollen & Wilson, 2010).

II. Literature Review

1. One-to-one Marketing in E-commerce

One-to-one marketing in a brick-and-mortar retail space is performed largely by salespeople's assistance and thus provides rich social contexts (Suprenant & Solomon, 1987). Comparatively, within the context of e-commerce, any marketing tactic resembles the process of a self-service activity with the lack of interpersonal influence (Alba et al., 1997), and individuating

customers on the web is actualized only in a highly impersonal manner (Nasr Bechwati & Xia, 2003). One-to-one marketing can gain even a greater potential in e-commerce situations, however, due to the extensive support available only on the web for gathering and mining information about customers (Ansari & Mela, 2003); marketing textbooks (e.g., Kotler & Keller, 2008) as well as managers have well postulated the importance of individuation of marketing tactics, particularly within e-shopping situations, and practical approaches have been widely suggested to help marketers serve their customers' individual preferences to a greater extent (e.g., Franke et al., 2009).

Our focus of interest here lies in a comprehensive conceptualization of the technology-based one-to-one marketing in apparel e-commerce. With still somewhat fuzzy in its definitions and categorizations (Vesanen & Raulas, 2006), central to one-to-one marketing is the individuation of products and services to fit one's own preferences (Peppers & Rogers, 1993; Wind & Rangaswamy, 2001). In line with the comprehensive view employed by Arora et al. (2008), Ball et al. (2006), and Pine and Gilmore (1999), one-to-one marketing is defined here as any creation or changes of a service attempting to match the individual requirements of a customer, embracing any service aiming at treating a consumer as a specific customer (e.g., Chakraborty et al., 2002) or all the firm's effort to provide consumers with more relevant and targeted news, information, and even advertisements, with an improvement of their experience with the website (Ansari & Mela, 2003; Seybold, 2001). The concept of one-to-one marketing overarches all types of firm's effort to develop an individualized and intimate relationship with a customer. For instance, marketing literature indicates two forms of one-to-one marketing in e-commerce contexts: (i) personalization, a firm-initiated individualization of web contents, and (ii) customization, a consumer-driven individuation of the contents, occurring when the customer proactively specifies one or more elements of his or her marketing mix (Arora et al., 2008). The examples of one-to-one marketing in apparel e-commerce includes a simple greeting note identifying a customer's name, 'my menu' services (e.g., provision of the list of recently viewed items), personalized emails responding to individual inquiries,

and mass-customization of products by demands (Lee & Park, 2009).

Consumer-perceived one-to-one marketing effort. Compared to a standardized marketing tactic, implementation of one-to-one marketing demands additional technological and/or monetary input from the firm's side, however, such investment may not always be acknowledged by the target consumers (Franke et al., 2009; Simonson, 2005). Due to the discrepancy between consumer-centric vs. firm-centric approaches, measuring the value of one-to-one marketing should be based on the consumers' interpretation of the marketing (Arora et al., 2008). Accordingly, this study measures consumer-perceived one-to-one marketing effort (herein OTO-E), distinguishing it from any firm-oriented value measurement such as the firm's prospected monetary profits or consumer response rates (e.g., Dellaert & Stremersch, 2005).

2. Psychological Benefits of OTO-E

Evidence has been provided in the marketing literature regarding the importance of subjective and psychological advantages that consumers may perceive during their shopping and/or consumption experiences. Psychological benefits largely postulate subjective evaluations of what is achieved from experience in a retail setting, encompassing a wide range of cognitive, emotional, and/or social merits (Babin et al., 1994). With many motivations existing as shopping goals (cf. Sheth et al., 1991), most typologies set a dichotomy of perceived benefits (e.g., Babin & Attaway, 2000; Babin et al., 1994; Bloch & Bruce, 1984; Hirschman & Holbrook, 1982). An in-store experience may provide the consumer with instrumental (utilitarian, functional) benefits by delivering information needed in goal-directed behavior (Hirschman & Holbrook, 1982), or, the experience may offer affective benefit through intrinsically satisfying pleasure to the senses, mental play, or amusement (Donovan & Rossiter, 1982). An initiation of this approach is found in Hirschman and Holbrook's (1982) conceptual suggestion, describing consumers as either problem solvers or people seeking sensory stimulation from their commercial experiences. The instrumental goal-directed factor envisions the consumer as

thoughtfully considering and evaluating product-related information prior to purchase versus the hedonic aspect or the pure enjoyment and fun of the shopping experience (Babin et al., 1994). This dichotomy has been represented in the retail context by topics of shopping as work versus as fun (Bloch & Bruce, 1984; Sherry et al., 1993), and has recently been extended into the context of e-shopping (Ball et al., 2006; Bridges & Flor-sheim, 2008; Childers et al. 2001; Fiore et al., 2005).

Building upon the prior literature (e.g., Franke et al., 2009; Peppers & Rogers, 1993; Simonson, 2005), we discuss perceived usefulness (Childers et al., 2001; Davis, 1989; Davis et al., 1989) as a core instrumental benefit derived from a firm's OTO-E, and a sense of pleasure and arousal as its affective benefits (Donovan & Rossiter, 1982; Mehrabian & Russell, 1974). Instrumental and affective benefits postulate comprehensive aspects of the crucial psychological effect of one-to-one marketing tactics on consumer, as the dichotomy captures distinct aspects of psychological benefits in e-shopping contexts (e.g., Childers et al., 2001; Fiore et al., 2005).

OTO-E to instrumental benefit. The technology acceptance model (TAM) from the information systems literature postulates perceived usefulness as a core instrumental motivation that drives consumers to participate in a technology-based activity, including shopping in e-commerce (Childers et al., 2001; Davis, 1989; Davis et al., 1989). Perceived usefulness refers to the extent to which using the system or technology will improve users performance/outcomes (Davis et al., 1989). In disaccordance with the initial intentions of managers, the extensive amount of information and numerous choice options available on the web does not directly result in the increase of perceived usefulness, and it may easily make the context as an information-overloaded situation where consumers end up with lower satisfaction levels from the negative psychological responses such as decision-related regrets and stress (Luce et al., 2001). As such, whether the great opportunity influences positively or negatively consumers' ultimate judgment and satisfaction largely depends on how consumers perceive and process such information and opportunities (Heitmann et al., 2007). By sorting and pre-screening possible options and

information on the web, OTO-E is apt to be positively related to perceived usefulness. Furthermore, the cognitive effort saved by OTO-E is also expected to enhance the subjective sense of usefulness of the e-shopping experience. Ansari and Mela (2003), for instance, suggest that customized communications on the web reduce the amount of individual's efforts information overload and aid customer decisions, and the highly relevant products that result from the individualized series can help maintaining consumer-firm relationships. According to Nasr Bechwati and Xia (2003), an individualization of services (e.g., recommendation system) is perceived as effort saving and thus is appreciated by consumers as an efficient way of saving their cognitive costs for a right decision. In sum, when consumers perceive that an e-store shows additional effort on one-to-one marketing to fulfill consumers' individual demands, they would be apt to evaluate their experiences in the e-store as more cognitively efficient. Therefore, the following is hypothesized:

Hypothesis 1 (H₁): Level of consumer-perceived OTO-E will have a positive effect on perceived usefulness in apparel e-shopping.

OTO-E to affective benefits. Expanding the initial postulation of the determinants of TAM that focused on instrumental motivations, Davis et al. (1989) suggest that a technology-based activity enhances positive affect that determines attitude toward the service provider. They contend that the positive emotion derived from the activity provides reinforcement on its own right, apart from any performance consequences that may be anticipated. A rationale for positive emotional effect of OTO-E is also found in the research stream of the effect of retail store environment (Eroglu et al., 2003; Mehrabian & Russell, 1974). Exploring the dynamics of in-stores' (e.g., Donovan & Rossiter, 1982) as well as on-e-stores' (e.g., Eroglu et al., 2003) atmospherics, the studies have demonstrated a significant impact of environmental stimuli on the formation of specific emotional states within a retail setting.

Drawn upon the literature, it is expected that when consumers perceive an e-store puts their effort on individualizing customers at its website, the consumers' affec-

tive benefit would increase. Particularly, we expect the OTO-E will be positively related to two emotional benefits, (i) pleasure, an emotional state that is a composite of feelings such as happiness, contentment, satisfaction, etc (Mehrabian & Russell, 1974), and (ii) arousal, "a measure of how wide awake the organism is, of how ready it is to act" (Berlyne, 1960). While marketing literature has conceptually indicated three distinct types of emotional states, pleasure, arousal, and dominance, as essential affective benefits deriving from consumption experience, empirical evidence largely supports the significant role of pleasure and arousal, but not the sense of dominance, in explaining consumer responses towards retail contexts (e.g., Donovan & Rossiter, 1982; Mummalaeni, 2005). Hence the following is hypothesized:

Hypothesis 2 (H₂): Level of consumer-perceived OTO-E will have a positive effect on (a) a sense of pleasure and (b) a sense of arousal in apparel e-shopping.

Affective to instrumental benefits. Based on the literature, this research suggests the inter-correlation between perceived usefulness and the positive emotional states. Specifically, it expects that a sense of pleasure and a sense of arousal derived from OTO-E will influence the perceived usefulness in apparel e-shopping. Arnold and Reynolds (2009) explain two distinct ways by which affect is related to cognitions and behaviors; first, an individual's current affective state may influence information processing either indirectly through the processes of mood-congruent (Isen et al., 1978), or directly, when affect itself provides information for the processes (e.g., Schwarz & Clore, 1983).

The crucial role of affective benefit in driving instrumental benefit has been emphasized in the literature of motivation and behavioral decision making, particularly in situations entailing a consumers active participation during the processes (e.g., Heitmann et al., 2007; Lazarus, 1991). That is, ultimate instrumental benefits yielded from a decision-making largely depend on affective states elicited from its process (Heitmann et al., 2007). Lazarus (1991), for instance, notes that engagement in a value-creation process yields specific

emotions (negative or positive), which in turn, determines the participants' overall evaluation of their functional performances. Similar suggestion has been documented in the recent literature of technologyaided consumer-empowering strategies on the web, revealing more relevance to the context of the current study (e.g., Franke et al., 2010; Kohler et al., 2011). The studies indicate that the ultimate utility perception of a consumer-involving strategy may depend on emotion yielded from the processes of active mental engagements (e.g., avatar using and adaptive customizing), as the emotion performs a significant impact on perceived utility of the resulting product/services.

Unlike a standardized e-shopping experience, an e-shopping experience involving one-to-one marketing strategies is apt to be related to consumers' additional effort in information processing and mental engagement (Dellaert & Stremersch, 2005). Based on the literature, when consumer perceives his/her e-shopping experience is interesting and intriguing in itself, such process-induced emotional benefits may positively affect subjective perception of usefulness of the e-shopping. This leads to the following hypothesis:

Hypothesis 3 (H₃): (a) A sense of pleasure and (b) a sense of arousal will have a positive effect on perception of usefulness in apparel e-shopping.

3. Benefits of OTO-E to Consumer Attitude

Instrumental benefit to ATE. We expect the potential relationship between the instrumental benefit deriving from the OTO-E and customers' evaluation concerning the e-store, that is, attitude toward the e-store (herein ATE) (Coyle & Thorson, 2001; Song & Zinkhan, 2008). People are apt to initiate and/or maintain their efforts in performing mental activities, particularly, when the activities are cognitively stimulating and satisfying by themselves (Deci & Ryan, 1985). In the marketing literature, prior work on this topic has consistently reported that instrumental benefits of e-shopping are positively related to word-of-mouth intentions and overall evaluation of the services (e.g., Childers et al., 2001; Harris & Goode, 2010; Häubl & Trifts, 2000). Thus:

Hypothesis 4 (H₄): Perception of usefulness in apparel e-shopping will have a positive effect on ATE in apparel e-shopping.

Affective benefits to ATE. Store-induced emotion influences subsequent consumer attitudes regarding the store, such as patronage intention, loyalty, and purchase or repurchase intention (e.g., Baker et al., 1992; Donovan & Rossiter, 1982; Fiore et al., 2005; Mummalaneni, 2005; Sherman et al., 1997). Extant literature on the topic suggests that this positive relationship between emotion and consumer attitudes is shown in the context of e-shopping. Positive emotion elicited by various web services features also can improve consumers' attitudes and behaviors on the web, such as high rates of consumer retention and intention for revisit or repurchase (e.g., Mummalaneni, 2005; Sherman et al., 1997). According to Nasr Bechwati and Xia (2003), people perceive a firm's effort on OTO-E activities (i.e., information recommendation system) and appreciate it as if they appreciate salespeople's efforts on individualized services. Therefore:

Hypothesis 5 (H₅): (a) A sense of pleasure and (b) a sense of arousal will have a positive effect on ATE in apparel e-shopping.

III. Methods

1. Participants

Participants consisted of 195 undergraduate students of a large mid western university in the U.S. An e-mail invitation was sent out to a list of randomly-sorted student emails from the academic personnel's office of the university. The U.S. market was chosen for the study as it is one of the markets evidencing a significant impact of a firm's OTO-E on consumer, due to the high consumer demands on individuation of service/ products (Fuchs, 2010). In order to recruit active online shoppers, we excluded the participants who had not purchased any apparel item through online shopping for the past one year. Seventy-three percentages out of the participants were female while twenty-seven percentages were male. Out of the rema-

ined participants, 53% had purchased apparel items more than once through online shopping. Seventy-four percentages of the participants were younger than 25 years of age and 26% were 25 to 34. On average, the participants had 44.5 months of apparel e-shopping experience (ranged from 2 to 96 months), and spent \$60 per month on apparel items. The participants reported spending an average of 2.5 hours (median=1.7 hours) per week on all types of e-shopping activities. In sum, the participants were familiar with apparel e-shopping and therefore were appropriate for the purpose of the study (Fiore et al., 2005; Mummalaneni, 2005).

2. Procedure

A URL link was sent to those who agreed to participate in the survey. The participants were told that they were about to take part in a study on the use of the Internet for apparel shopping. Then they were asked to browse three specific apparel e-shopping sites to get first-hand exposure to the range of shopping opportunities available on the e-stores: (i) Gap.com, (ii) Jcrew.com, and (iii) Saks.com. These e-stores were selected on the basis of the results of a preliminary test. In the preliminary test, sixty undergraduates at the same university (36% male, age from 18 to 36) were asked about websites that they had recently visited for apparel shopping. The purpose here was to orient participants to the apparel web shopping purpose of the study and provide a baseline of familiarity for subjects related to their e-shopping experience. Moreover, the three e-stores were specifically chosen in order for this study to encompass a wide range of apparel products (i.e., a variety of item selections both for male and female) and retail price ranges (i.e., from low- to high-priced apparel items), and most importantly, they were providing active one-to-one marketing tactics. The participants were then asked to pick one e-store among the suggested e-stores, to visit it, and to choose an apparel item in any categories available at the e-store (e.g., casual & formal wears, hosiery, accessories, underwear, etc.) within 10 minutes. Having finished the given task, they completed a questionnaire based on the shopping experience. The questionnaire consisted of demo-

graphics (e.g., age, gender), questions about apparel e-shopping and Internet-using experiences, and the questions of the core measures of the study.

3. Measures

The OTO-E was operationally defined here as a firm's strategic effort to individualize its relationship with a customer by tailoring any part of web contents, services, or communications targeting the customer (Pepers & Rogers, 1993), and measured using the three items from the established literature (Ball et al., 2006; Srinivasan et al., 2002). Perceived usefulness was measured using the three items developed by Davis et al. (1989) and adapted into technology-based activities by Childers et al. (2001). The two constructs were measured through the use of multiple item 7 point Likert-type scales ranging from 1 (strongly disagree) to 7 (strongly agree). Affective benefits were measured using existing scale developed by Mehrabian and Russell (1974) and applied in e-shopping settings by Mummalaneni (2005). Following Sherman and colleagues Sherman et al. (1997), semantic differential items with seven-point scales were used to measure pleasure (three items) and arousal (three items). Finally, to measure ATE, we used Coyle and Thorson's (2001) three semantic differential items with seven-point scales, that have been successfully employed in other studies to measure website attitudes in the context of e-commerce (e.g., Fiore et al., 2005; Song & Zinkhan, 2008).

IV. Results

1. Validity and Reliability

The construct validation of the measures was estimated with confirmatory factor analysis (Churchill, 1979; Gerbing & Anderson, 1988) using Amos version 19.0. As a result, factor loadings for each construct were all above .55 on the factor, showing convergent validity of the measures (Nunnally, 1978). The CFA model showed statistically significant chi-square value ($\chi^2=145.57$, $df=78$, $p<.001$), which was not unusual for its tendency to be sensitive to sample size (Jöreskog & Sörbom, 1993). Other fit indices were considered

in conjunction with the chi-square value. For an acceptable measurement structure of the construct, the prior literature (e.g., Baumgartner & Homburg, 1996; Browne & Cudeck, 1993) suggested a threshold value of .90 for the fit indices, and the results exceeded the threshold level (CFI=.96, NFI=.93, GFI=.93, AGFI=.91, RFI=.91, IFI=.97, RMSEA=.068). The reliability of the constructs was estimated by Cronbach's alpha, demonstrating acceptable ranges all above .70 (Nunnally, 1978). In addition, discriminant validity was measured with average variance extracted (AVE). AVE values provide information about "the amount of variance that is captured by the construct in relation to the amount of variance due to measurement error (p. 45)" and is considered as a more conservative measure than construct reliability (Fornell & Larcker, 1981). The prior literature (e.g., Bagozzi & Yi, 1988) suggests that for an acceptable level of discriminant validity, AVE should exceed a threshold value of .50 and squared correlations among the constructs. The values for the model constructs ranged from .56 through .85., all exceeding the squared correlations (ranged from .05 to .43), and the suggested threshold level (Table 1). Therefore, the AVEs and the squared multiple correlations of the indicators revealed that the measurement model was reliable and valid.

2. Overall Model

As the first step in assessing the hypothesized relationships, the structural model was evaluated by examining the chi-square and fit indices (Fig. 1). Again, while the chi-square value was significant and indicated that the hypothesized model did not fully resemble the pattern of covariance contained within the raw data ($\chi^2=141.44$, $df=78$, $p<.001$), the fit indices revealed fair fits (Baumgartner & Homburg, 1996; Browne & Cudeck, 1993). For the hypothesized model, the CFI was .97, NFI was .93, GFI was .91, AGFI was .90, RFI was .91, and IFI was .97, exceeding the standards suggested in the literature (Baumgartner & Homburg, 1996). The RMSEA was .065, satisfying the range of reasonable errors suggested by Byrne (1998) and Hair et al. (1998). In regard to the variance explained for the structural equations, 56% of the variance in ATE

Table 1. Factor analysis for measures

Latent Variables and Indicators	CFA ^a Loadings (standardized)	Mean	SD	AVE	α
One-to-one Marketing Effort (OTO-E)					
O1. This website makes me feel that I am a unique customer.	.88				
O2. I believe that this website shows efforts personalized to my needs.	.96	3.92	1.35	.76	.89
O3. This website provided me with individualized services.	.78				
Perceived Usefulness					
U1. My shopping experience on the website improves my shopping productivity.	.91				
U2. My shopping experience on the website enhances my effectiveness in shopping.	.84	3.30	1.53	.74	.91
U3. My shopping experience on the website improves my shopping ability.	.71				
Sense of Pleasure					
While shopping at the website, I felt:					
P1. Bored-Relaxed	.80				
P2. Annoyed-Pleased	.82	4.69	1.44	.56	.79
P3. Desparing-Hopeful	.78				
Sense of Arousal					
While shopping at the website, I felt:					
A1. Calm-Excited	.90				
A2. Dull-Jittery	.82	3.86	1.50	.63	.83
A3. Unaroused-Aroused	.78				
Attitude Toward the E-store (ATE)					
Overall, my shopping experience at the website was:					
AT1. Good-Bad	.86				
AT2. Favorable-Unfavorable	.97	4.10	1.42	.85	.95
AT3. Like-Dislike	.92				

^aCFA=confirmatory factor analysis

^b $\chi^2=145.566$, $df=78$, $p<.001$; comparative fit index; CFI=.96; NFI=.93; RFI=.91; IFI=.97, GFI=.93 AGFI=.91, RMSEA = .068

was explained by the hypothesized model. For the endogenous constructs the variance explained indices were as follows: usefulness (45%), pleasure (10%), and arousal (14%). Correlations among the constructs appear in <Table 2>. Overall, these indicators were consistent in pointing to an acceptable fit of the hypothesized model to the data so we next turned to an examination of the individual parameters of the model and their relation to the hypotheses proposed in our framework.

3. Hypotheses Testing

OTO-E to psychological benefits. Analysis of our model provided a statistical support for our five hypotheses. First, H₁ posited that the consumer-perceived level of OTO-E would increase perception of usefulness in the e-shopping. The results found a sig-

Table 2. Correlation matrix of model constructs

Model Construct (N=271)	Correlation				
	1	2	3	4	5
1. OTO-E	1.00				
2. Usefulness	.61***	1.00			
3. Pleasure	.31***	.45***	1.00		
4. Arousal	.42***	.61***	.23***	1.00	
5. ATE	.40***	.64***	.66***	.42***	1.00

*** $p<.001$

nificant relationship between OTO-E and usefulness perception ($\beta=.31$, $t=3.65$, $p<.001$), providing support for the hypothesis 1. H₂ expected that the level of OTO-E will also increase emotional benefits that consumers perceive in their e-shopping. The results provided statistical support for this hypothesized relationship, as the path from OTO-E to pleasure (H_{2a}: $\beta=.38$, $t=4.73$, $p<.001$) and to arousal (H_{2b}: $\beta=.42$, t

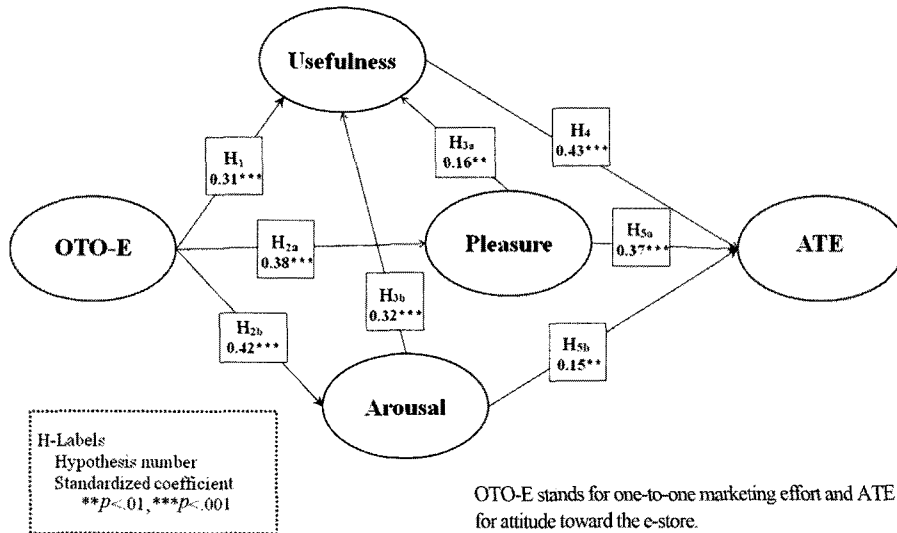


Fig. 1. Structure model.

=5.47, $p < .001$) were all significant.

Affective to instrumental benefits. Further to the H_1 and H_2 , H_3 assumed that affective benefits derived from OTO-E would be positively related to instrumental benefit perceived during the e-shopping experience. Providing support for the H_3 , the influence of pleasure and arousal on usefulness perception was all significant (for pleasure (H_{3a}), $\beta = .16$, $t = 2.31$, $p < .01$; for arousal (H_{3b}), $\beta = .32$, $t = 4.20$, $p < .001$).

Psychological benefits to ATE. H_4 and H_5 expected that the level of instrumental and affective benefits derived from OTO-E would ultimately lead to positive e-store evaluation. To support H_4 , the proposed positive effect of usefulness on ATE was found ($\beta = .43$, $t = 5.70$, $p < .001$). Moreover, supporting H_5 , the positive effect of pleasure on ATE was found (H_{5a} : $\beta = .37$, $t = 5.01$, $p < .001$) and so was the significant effect of arousal on ATE (H_{5b} : $\beta = .15$, $t = 2.37$, $p < .01$).

V. Discussion

The primary purpose of this study was to understand potential of technology-based one-to-one marketing within apparel e-commerce, in regard to its psychological effect on consumer. Under this objective, a model was tested, integrating level of OTO-E, perceived usefulness, pleasure and arousal, and ATE in apparel

e-shopping contexts. The results expanded the current research on one-to-one marketing, by incorporating a consumer-oriented approach, and empirically validating the psychological effect of OTO-E. In doing so, this study broadens the extant research scope of one-to-one marketing in the service and marketing literatures and contributes to developing a better idea concerning psychological mechanisms determining subjective value of a firm's one-to-one marketing from the consumers' perspective.

The findings confirmed the crucial role of OTO-E in shaping the instrumental as well as affective benefits in apparel e-shopping, all of which had strong positive impacts on ATE. The results are consistent with the prior literature indicating the role of one-to-one marketing in building positive consumer attitudes toward the firm (e.g., Peppers & Rogers, 1993; Srinivasan et al., 2002) and the importance of psychological effect of the one-to-one marketing in specific, and of consumer-empowering strategies in general (Fuchs, 2010). Furthermore, the mediating effects of the instrumental and emotional benefits are statistically confirmed, adding empirical support on the critical effect of the benefits in estimating and evaluating the effect of marketing strategies in apparel e-commerce contexts (Lee & Park, 2009).

One of the interesting findings in our results is the

significant role of affective benefits in the suggested model. While OTO-E had similar impacts on the three benefit variables, the variables' effect sizes on ATE were drastically different, showing stronger influence of the affective benefits (pleasure and arousal) to ATE than that of the instrumental benefit (perception of usefulness). This is consistent with the prior literature stating the important mediating role of emotion in utilitarian value creation (e.g., Heitmann et al., 2007). To explain, it was the affective benefits derived from OTO-E that actually determined significant amount of the variance in ATE. Such a stronger impact of affective benefit than that of instrumental benefit was rather inconsistent with the existing marketing literature indicating the essence of technology-based transactions as utilitarian and rational aspects, and emotional and hedonic aspects as its subsidiary (e.g., Bridges & Florsheim, 2008; Childers et al., 2001). Our results may reflect the unique characteristics of apparel, one of the product categories that are apt to involve strong emotional mechanisms concerning consumers' reactions towards marketing tactics (Nelson, 1970).

Managerially, the findings of the study can be useful in developing strategic ways to measure and implement one-to-one marketing tactics from the consumers' perspective. As the study was conducted in the U.S. market with intense consumer demands for individualization of services, the results should provide useful managerial/ theoretical implications to Korean apparel e-tailers, concerning their future implementation of one-to-one marketing. Our postulation of the relationships among OTO-E, the benefits, and ATE may offer a more efficient way of tracking consumer relationships with apparel e-stores and allow marketers to devise more effective structural mechanisms for a durable emotional connection (Fuchs, 2010). From the results, managers also can gain insight in regard to how to build long-term and emotionally-evoked firm-consumer relationships at a cyber space (Yoon et al., 2008). In essence, the results of this study highlighted that companies' investment in one-to-one marketing is worthwhile effort to develop positive consumer evaluations concerning the firm (Arora et al., 2008; Du Wulf et al., 2001). The results demand e-tailers put more attention to various marketing tactics treating customers as

individuals.

In a traditional retail setting, psychological benefits derived from positive in-store environments have been indicated as essential in assuring or entertaining shoppers (e.g., Babin & Attaway, 2000; Babin et al., 1994). Research has claimed that, the lack of rich environmental stimuli on the web is likely to lead to a decrease in the positive psychological benefits within e-shopping contexts, and this may hold e-shoppers back from completing their transactions or becoming loyal to the e-store (e.g., Mummalaneni, 2005). Hence, there have been ongoing managerial demands for strategic ways to elicit a positive psychological dynamics on the web (Mollen & Wilson, 2010). From our results, a firm's one-to-one marketing tactics may be effective in generating such benefits within e-store settings and thus be useful in alleviating the e-stores' web-specific environmental hurdles, as the results provide an empirical support that positive instrumental and emotional benefits can be yielded from a firm's implementation of one-to-one marketing. In designing retail websites, therefore, careful considerations should be made to enhance consumer-perceived level of OTO-E within the website. Examples include various sub-factors of one-to-one marketing, such as personalized contents and opportunities for adaptive customization (Lee & Park, 2009).

Limitations and future studies. Since this study is exploratory in its nature, the findings would warrant a more generalizable insight if they were replicated in the context of diverse e-shopping settings. As the nature of OTO-E entails a repeated and consistent interaction between a firm and a customer (Simonson, 2005), for the main stimuli of the study, this study intentionally chose actual e-stores that are familiar to the participants. Although appropriate for such an initial research work concerning the one-to-one marketing that inevitably entails relational aspects to some degree, the results may reflect the effect of the participants' individual sense concerning the e-store that had been formed from their actual experiences on the e-store. In following studies, consideration of various existing consumer-firm relationships, such as first-time visits or experimental settings with fictitious e-stores, would be helpful in gaining further understanding of

the OTO-E effect initiated in this study. In addition, as the effect of OTO-E may vary by consumers' individual (e.g., involvement, category knowledge) as well as situational characteristics (e.g., product price, purchase for oneself vs. purchase as presents) (Franke et al., 2009), future studies including various consumption situations would give perspective to apparel e-tailers on their next level of service management providing a strong competitive edge in the market. Lastly, while the findings provide a insightful guidance in estimating the value of one-to-one marketing within a Korean context, viable cultural influences should be considered in extending the results. For instance, compared to Western countries where individualism prevails regarding consumer behavior, the collectivism of Korea might reveal a moderating effect alleviating the positive impact of one-to-one marketing on consumer.

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