

Consumer Perception of Social Presence in E-tail Websites

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Abstract

This study examines the role of consumer perception of social presence in e-tailing websites. The study proposes that the perception of social presence influences the variables that are important for e-tailers to build a relationship with consumers, which are the attitudes of consumers toward an e-tailer and patronage intentions toward the e-tailer. This study hypothesizes that the attitudes of consumers are influenced by individual perceptions of social presence that guide their patronage intentions. Consumer trust and their affective states are hypothesized to serve as mediators in the relationship between consumer perception of social presence and the attitudes toward an e-tailer. Sixty-one female students were used to test the proposed model. The findings from regression and mediation analyses supported all hypotheses, suggesting that the perception of social presence plays a significant role in consumer shopping habits for apparel: consumer perception of social presence influences consumer trust and affective states that modify attitudes toward an e-tailer and consumer patronage intentions. The theoretical and managerial implications for apparel e-tailers are discussed.

Key words: Social presence, Trust, Affective state, Attitude, Patronage intentions

I. Introduction

With a growing number of people using the Internet, the Internet has become a major communication medium between consumers and retailers. This also includes shopping online. According to the U.S. Census Bureau, e-commerce sales have been increased at a faster rate than total retail sales: for the fourth quarter of 2009, e-commerce sales increased 14.4 percent from the fourth quarter of 2008 while the total retail sales increased 2.2 percent (“Quarterly Retail E-Commerce Sales”, 2009). Consisting of 3.8 percent of total retail sales, e-commerce has become a competitive retail channel. In this competitive industry, online consumers find it easier to switch between various e-tailers, and it becomes more critical for e-tailers to develop positive relationships with consumers.

To some extent, consumer experiences with e-tailers are different from those of offline retailers. For

apparel e-tailers, especially, such differences can be crucial since the characteristics of triability and interactions with sales associates and other consumers are important factors for many apparel consumers in their decision making process. The nature of shopping with e-tailers is that an online consumer interacts with a computer-mediated environment with limited experiences. For such reasons, online consumers lack physical (i.e., consumer to store environment) and personal (i.e., consumer to other consumers or consumer to employees in stores) interactions in e-tail environments. In other words, the online consumers lack feeling of “socialness” in e-tailers. This lack of interaction is noted as one of the impediments to the progress of e-tailing (Barlow et al., 2004). To compensate for the lack of interactions, many e-tailers incorporate social cues such as live chat, email, and digital receipt plans (Freeman, 2000) so that they enhances consumers' perceptions of “socialness” and interactions.

Consumers' perceptions of social and physical

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interactions with e-tailers have recently attracted research attention (Hassanein & Head, 2005-6; Wang et al., 2007). The studies generally support the social presence theory (Short & Williams, 1976). The general proposition from the studies is that individuals who interact with a medium treat the medium as a social actor and perceive the interaction with the medium similar to that with humans (Reeves & Nass, 1996). The theories of social response and social presence suggest that consumers' perception of social presence plays a significant role in building a positive relationship between consumers and an e-tailer.

This paper has two major purposes. First, the paper attempts to test the theory of social presence, which can explain the effects of online apparel consumers' perception of social presence on their responses toward apparel e-tailers. Suggesting that consumers' perception of social presence is an important construct in their shopping experiences with e-tailers, this paper examines its effects on the constructs that are essential to the formation of positive relationships with an e-tailer (i.e., attitudinal & behavioral responses) in order to add evidence to the current research on social presence. Second, this paper investigates the mediating effects in the relationship between consumers' perception of social presence and their attitudinal responses toward an e-tailer. One of the possible and important mediators is consumer trust based on the notion that consumers' beliefs (i.e., trust) are necessary to build a true relationship (Moonman et al., 1993). In loyalty formation, for example, consumers' cognitive belief in the relationship with a store precedes their attitudinal and conative behavior (Oliver, 1999). In addition to consumers' cognitive states, a significant portion of literature accentuates the role of consumers' affective states in influencing consumers' responses toward a store (Donovan & Rossiter, 1982; Eroglu et al., 2003; Mehrabian & Russell, 1974). In the context of apparel e-tail websites, the role of affective states is considered as another possible mediator in the effects of consumers' perception of social presence on consumer response toward an e-tailer. Therefore, this paper investigates the mediating effects of consumer trust and affective states as the relevant mediating variables in the relationships

between consumers' perception of social presence and their attitudes toward an e-tailer.

II. Literature Review

1. Social Presence

Social presence refers to the extent to which a medium (e.g., television, computer, or machine) is perceived as sociable or personal by users in a mediated environment (Short & Williams, 1976). It has attracted interest from many researchers in communications and operations because it influences communication efficiency and satisfaction in communication performances (Fulk et al., 1987; Rice, 1992; Straub & Karahanna, 1998). Social response theory asserts that people respond to computers treating computers as social actors (Reeves & Nass, 1996). Previous studies demonstrate that people interact with computers as they do with people, exhibiting different responses by a computer's reciprocity (Moon, 2000), voice generated by a computer (Nass et al., 1997), and the presence of Avatars (Holzwarth et al., 2006; Wang et al., 2007).

The importance of media characteristics for "socialness" is further explained by the social presence theory, which proposes that a computer-mediated communication becomes more effective when the communication medium (e.g., an e-tailer's website) has the capability to convey an appropriate level of social presence for a task. According to the social presence theory, the perception of social presence is equated with the degree of users awareness of the presence of other people in a communication interaction (Short & Williams, 1976). The awareness is influenced by the communicated medium's sensory cues, social cues, and interactivity, which are important to face-to-face communications (Daft & Lengel, 1986). Such cues of the medium generate the degree of vividness, defined as the representational richness of a mediated environment by its sensory cues (Steuer, 1992), and interactivity, a degree to which a user interacts with an medium (Cowles & Crosby, 1990; Keng & Lin, 2006). More vivid and interactive computer-mediated environment influence an individual's awareness

of social presence (Fortin & Dholakia, 2005). This study defines social presence as the extent to which a consumer perceives socialness and realness of an apparel e-tail website when they are shopping at an apparel e-tail websites.

As the perception of social presence plays a significant role in individuals' communication qualities and performances in a communication interaction (Daft & Lengel, 1986; Short & Williams, 1976), it is suggested that the construct of social presence should be considered in consumer experiences with an apparel e-tailer since individuals' perception of "socialness" influences their responses toward media like an e-tailer's website.

2. Hierarchical Consumer Responses toward an E-tailer: Attitudinal-behavioral Responses

One of the goals for e-tailers is to have positive relationships with consumers. As to the relationship formation, numerous studies in brick and mortar retailing and e-tailing have adopted constructs of attitude and behavioral intention since they are strong and important to show a relationship between a consumer and a retailer and to measure consumers' responses toward a particular retailer (Korgaonkar et al., 1985; Pan & Zinkhan, 2006). Attitude is defined as a "psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993). It has been extensively accepted in consumer research as a variable that predicts consumer behavior in various settings (Jeong & Lambert, 2001; Sheppard et al., 1988). Patronage intention has also been widely used as a behavioral variable (Grewal et al., 2003; Laaksonen, 1993; Pan & Zinkhan, 2006). From a retailer's perspective, retail patronage intention is a critical variables because it assesses customers' likelihood to shop at a particular retailer more frequently (Pan & Zinkhan, 2006).

With the importance of attitudes and patronage intentions toward a store, many studies have explored antecedents to attitudes and/or patronage intentions. Applying the theories of social response (Reeves & Nass, 1996), social presence (Short & Williams, 1976),

and media richness (Daft & Lengel, 1986), previous research has examined the indirect effects of social presence on attitudes (Hassanein & Head, 2005-6) and on behavioral intentions toward a travel e-tailer (Wang et al., 2007) and existing e-tailers such as Amazon.com and Travelocity.com (Gefen & Straub, 2004).

Although previous research has shown indirect effects of social presence on individuals' attitude (Fortin & Dholakia, 2005; Hassanein & Head, 2005-6), the direct effect of individuals' perception of social presence on their attitudes toward an apparel e-tailer is expected. Especially, apparel shoppers enjoy sensory experience enablers on e-tail websites because they enhance the hedonic value of online shopping process and their attitudes (Kim & Forsythe, 2009). Since technologies are provided by e-tailers, consumers' positive experiences and perceptions induced by the technologies will lead to positive attitudes toward the e-tailers. Based on the literature, it is reasonable to hypothesize that an online consumer's perception of social presence induced by an apparel e-tail website positively influences the consumer's attitude toward the e-tailer (H1a).

Furthermore, this paper views the two constructs (attitudes & behavioral intentions) in a hierarchical consequence, where consumers' attitudinal responses lead to their behavioral responses toward an e-tailer. Consumer attitude structure describes that consumers' responses toward an object are detected in all three decision-making phases: cognition (e.g., beliefs), attitudes, and behavioral intentions (Oliver, 1999). Similarly, loyalty research conceptualizes attitudinal and behavioral responses as hierarchical dimensions, in which a consumer's attitudinal response is an antecedent to his or her behavioral response (Day, 1969). Based on the literature, it is expected that an online consumer's attitude toward an e-tailer positively influences his or her behavioral response such as patronage intention toward the e-tailer (H1b). Taking them together, it is hypothesized that the perception of social presence influences a hierarchical structure of consumer responses in such a way that it influences attitudes, which, in turn, influences behavioral intentions. Therefore, we hypothesize that an online

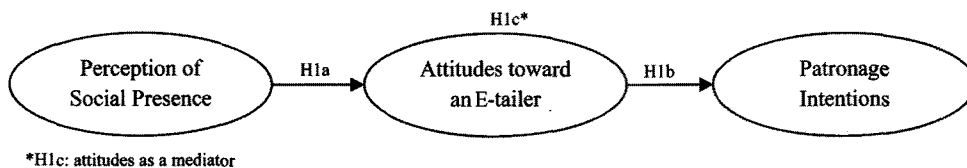


Fig. 1. The effects of social presence on hierarchical consumer responses.

consumer's attitude toward an e-tailer serves as a mediator in the relationship between his or her perception of social presence and patronage intention (H1c). <Fig. 1> describes the hypothesized relationships.

H1a: Participants' perception of social presence positively influences their attitude toward an e-tailer.

H1b: Participants' attitude toward an e-tailer positively influences their patronage intentions toward the e-tailer.

H1c: Participants' attitude toward an e-tailer mediates the effect of participants' perception of social presence on their patronage intentions toward the e-tailer.

3. Mediating Effects: Trust and Affective State

1) Trust

Trust has been noted as a crucial factor in many types of relationships with partners, defined as "a willingness to rely on an exchange partner in whom one has confidence" (Moonman et al., 1993). In online stores, where consumers possess higher levels of uncertainty and risk, trust becomes more critical than other factors such as price, as Reichheld and Scheffer (2000) argue that "price does not rule the Web; trust does". By definition, trust is a social reality, which is built through interactions between partners (Lewis & Weigert, 1985). For example, customer trust can be created through the interactions with sales associates as can be seen in many apparel retail stores, where customers' loyalty strongly ties with their trust in sales associates who customers interact with (Sirdeshmukh et al., 2002). In online stores, where customers cannot touch products, cannot talk to the sales associates, and cannot interact with other people, such ways to build consumer trust may be

limited. In this environment, consumers' perception of social presence influences consumer trust (Gefen & Straub, 2003). According to the social presence theory, if consumers' perception of presence is induced by an e-tail website, such feelings of "socialness" will influence their interactions with the e-tailer, through which trust is developed. In an e-tail environment, where personal interaction is limited, consumers' perception of social presence is expected to play a role in building consumer trust toward the e-tailer.

Trust is important in increasing consumers' behavioral intentions (Mukherjee & Nath, 2007). If individuals have a certain level of trust toward an object, they probably have positive attitudes towards the object. Hassanein and Head's study (2005-6) shows the positive relationship between trust and attitudes although they didn't test the mediating effect. Given the importance of trust in a formation of consumers' positive responses, which is formed in social interactions, trust is expected to mediate the relationship between social presence and attitudes. That is, in order for consumers to have positive attitudes toward an e-tailer, they may need to trust the e-tailer to some extent. Therefore, we expect the mediating effect of trust in the relationship between consumers' perception of social presence in an e-tail website and their attitudes toward the e-tailer (Fig. 2).

H2: Participants' trust toward an e-tailer mediates the effect of the participants' perception of social presence on their attitudes toward the e-tailer.

2) Affective State: Pleasure

Affective state refers to individuals' conscious or unconscious affective responses toward environmental stimuli (Mehrabian & Russell, 1974). It has been noted as an important construct explaining individuals' mental state, which influences their specific actions

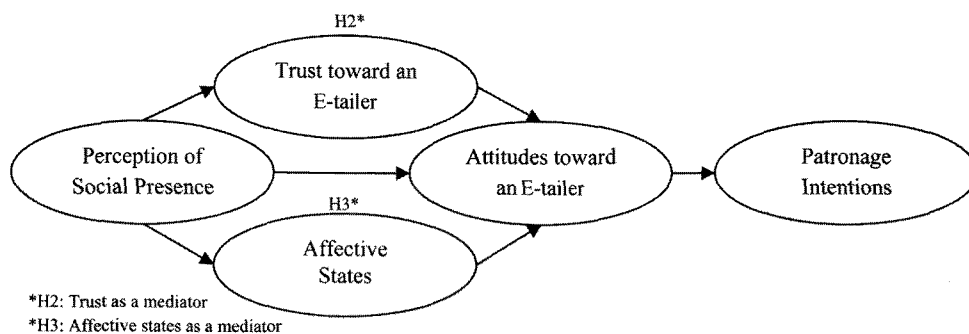


Fig. 2. The mediating effects of trust and affective between social presence and attitudes.

to a certain situation (Bagozzi et al., 1999). Influenced by environmental researchers, who accentuate the role of individuals' affective states as a mediator in the effect of a stimulus on their responses, numerous studies have exhibited the importance of affective state as a mediator in both traditional and e-tail store environments (Donovan & Rossiter, 1982; Eroglu et al., 2003). Moreover, if consumers' perception of social presence is induced a website, it may compensate for possible negative feelings generated by the website, where physical and personal interactions are limited. Therefore, it is expected that consumers' perception of social presences influences their affective states, which, in turn, affect their attitudes toward the e-tailer (Fig. 2).

H3: Participants' affective state mediates the effect of the participants' perception of social presence on their attitudes toward the e-tailer.

III. Methods

1. Procedures

Students in a southern-eastern university in the United States (U.S) were asked to participate in the study in exchange for extra credit. Since students have been required to take computer classes and to use the Blackboard platform to prepare for classes, it was assumed that the level of familiarity with the Internet would be similar among students. Also, the target consumers of this mock e-tailer are in their before twenties and early thirties. Thus, it was reasonable to use student subjects for this study. Approx-

imately eighty students who consented to participate in the study accessed the online survey, which contained a link to a mock e-tailer website, and were randomly assigned to one of the two websites: higher level of and lower level of presence inducing websites. Due to the considerable difference in the number of male (N=19) and female students (N=61), only the female sample was used for the main study. Among the 61 female students, twenty-nine female students browsed the higher level of presence-inducing website while thirty-two female students browsed the lower level website. After participants browse the assigned mock website for about five minutes, they were asked to fill out the questionnaire.

An online survey was employed because it provides the researchers with strong advantages by allowing for randomization (Evans & Mathur, 2005), and it is considered to be appropriate for this online consumer study. It is also convenient for the participants because after they have visited the mock website, they could continue to answer the survey questions, linked to the mock website.

2. Stimuli

To create a variation in participants' perception of social presence, two mock websites (i.e., high vs. low presence) were developed. Although some studies have employed pre-existing websites (Gefen & Straub, 2003), the current study developed mock websites to eliminate any possible pre-established cognitive and/or behavioral tendency toward a particular e-tailer. The two mock websites incorporated different levels

of presence inducing factors for creating variation in the perception of social presence. Different levels of presence-inducing websites were manipulated using two widely used factors: vividness and interactivity (Fortin & Dholakia, 2005; Keng & Lin, 2006). For interactivity manipulation, in the lower level of presence-inducing website, all images were linked by clicking and an option to enlarge the photos was available. In the higher level of presence-inducing website, participants were allowed to sort products by brands, and greetings on the main page were additionally available, in addition to the features of the lower social website, the sorting tool. To manipulate vividness, product images of a higher resolution were provided in the higher social website compared to the lower level of website. To evaluate whether each website had significantly different levels of presence-inducing factors, participants in each treatment were measured on a seven-point presence scale ($\alpha=.88$) (Biocca, 1997; Coyle & Thorson, 2001). One-way analysis of variance (ANOVA) revealed that the higher level of presence-inducing website is perceived

as significantly higher toward the level of presence ($F=4.379, p<.05$).

3. Measures

All survey items were adopted from previous literature. Each item was measured on a seven point scale and adjusted to reflect the mock website developed for the study. That is, the name of a fictitious e-tailer, "My Closet" was included in each sentence. <Table 1> lists items used in this study. Exploratory Factor Analyses (EFA) conducted on each construct supported that each construct is unidimensional. Reliability analyses using Cronbach's α showed that each construct is considered to be reliable. Then, a mean value from the items of each construct was used to represent the value of each construct.

IV. Results

Due to the small sample size, simple and multiple regression analyses were employed to test the hypoth-

Table 1. Measures

| Items | Factor Loadings | Reliability (α) | Source |
|---|-----------------|--------------------------|----------------------------|
| Social Presence | | | |
| 1. There is a sense of human contact in My Closet. | .83 | .89 | Gefen & Straub (2003) |
| 2. There is a sense of personalness in My Closet. | .86 | | |
| 3. There is a sense of sociability in My Closet. | .89 | | |
| 4. There is a sense of human warmth in My Closet. | .88 | | |
| Trust | | | |
| 1. I felt that My Closet was honest. | .85 | .86 | Hassanein & Head (2005-6) |
| 2. I felt that My Closet was trustworthy. | .90 | | |
| 3. I felt that My Closet cared about customers. | .86 | | |
| 4. I felt that My Closet provided me with good service. | .75 | | |
| Affective States | | | |
| 1. Unhappy/Happy. | .95 | .96 | Mehrabian & Russell (1974) |
| 2. Annoyed/Pleased. | .91 | | |
| 3. Unsatisfied/Satisfied. | .92 | | |
| 4. Melancholy/Contented. | .92 | | |
| Attitude | | | |
| 1. Bad/Good. | .96 | .91 | Dabholkar (1994) |
| 2. Unpleasant/Pleasant. | .94 | | |
| 3. Beneficial/Harmful. | .69 | | |
| 4. Unfavorable/Favorable. | .93 | | |
| Patronage Intention | | | |
| 1. I would be willing to shop at My Closet. | .96 | .96 | Wang et al. (2007) |
| 2. The likelihood that I would shop at My Closet in the future is high. | .96 | | |
| 3. I would be willing to recommend My Closet to my friends. | .98 | | |

eses. Although structural modeling method is inappropriate for the study with small sample, regression analysis is probable since simple regression can be effective with a sample size of 20, and multiple regression with a sample size of 50 (Hair et al., 2005). Or, it can be effective when the minimum ratio of sample to independent variables is 5:1 for simple regression, and 15:1 or 20:1 for stepwise regression (Hair et al., 2005). Hence, simple and multiple regression analyses could be done with the sample size of 61.

Simple linear regressions revealed a significant relationship between (1) perception of social presence and attitude ($b_1=.52$, Std Error (SE)= .11, Std. $\beta=.53$, $p<.001$, Adj $R^2=.27$) supporting H1a, and (2) attitude toward patronage intentions ($b_2=.84$, SE=.14, Std. $\beta=.63$, $p<.001$, Adj $R^2=.39$) supporting H1b. Also, the effect of social presence on patronage intention was significant ($b_3=.75$, SE=.14, Std. $\beta=.57$, $p<.001$, Adj $R^2=.31$).

Mediation analyses followed Baron and Kenny's procedure (1986). To test the mediation effect of attitude, a stepwise multiple regression was employed. When controlling for the effect of attitude ($b_4=.61$) on patronage intentions, the effect of perception of social presence on patronage intentions was attenuated to .43 (b_5) from .75 ($p<.01$, Adj $R^2=.45$), resulting in .32 of the mediation effect (calculated either by b_3-b_5 or by b_1*b_4). This suggests a partial mediation effect. To determine the significance of this partial mediation effect, Sobel's test (1982) was conducted. The z-score of 3.28 from the Sobel test (calculated by having the mediated effect divided by b_1*b_4 standard error, .097) suggests that the partially mediated effect is statistically significant. Thus, H1c was supported.

Given significant relationships from a series of regressions in (1) trust \rightarrow attitude ($b=.97$, SE=.11, Std. $\beta=.74$, $p<.001$, Adj $R^2=.54$), (2) perception of

social presence \rightarrow attitude ($b=.52$, SE=.11, Std. $\beta=.53$, $p<.001$, Adj $R^2=.27$), and (3) perception of social presence \rightarrow trust ($b=.39$, SE=.09, Std. $\beta=.51$, $p<.001$, Adj $R^2=.25$), the mediation analysis showed that when controlling for the mediating effect of trust ($b=.83$, SE=.13), the effect of social presence on attitude was attenuated ($b=.20$, SE=.10, Std. $\beta=.20$, $p<.05$, Adj $R^2=.57$), which revealed a partial mediation effect. From the Sobel's tests (1982), the amount of mediation effect .32 was significant (z-score=3.66), supporting H2. Using the similar procedure, H3 was tested. Given significant relationships from a series of regressions in (1) affective states \rightarrow attitude ($b=.60$, SE=.10, Std. $\beta=.61$, $p<.001$, Adj $R^2=.36$), (2) perception of social presence \rightarrow attitude ($b=.52$, SE=.10, Std. $\beta=.53$, $p<.001$, Adj $R^2=.27$), and (3) perception of social presence \rightarrow affective states ($b=.48$, SE=.11, Std. $\beta=.48$, $p<.001$, Adj $R^2=.21$), the mediation analysis showed that, when controlling for the mediating effect of affective states ($b=.46$, SE=.11), the effect of perception of social presence was attenuated ($b=.31$, SE=.11, Std. $\beta=.31$, $p<.01$, Adj $R^2=.43$) from .52 to .31, which revealed a partial mediation effect. As the amount of the mediation effect, .21, was significantly different from 0 based on the Sobel test (1982) (z-score=4.38), H3 was supported. <Table 2>-<Table 3> provide the summary of the hypotheses testing. <Fig. 3> describes the hypothesized model with significant coefficients.

V. Conclusions and Discussion

The findings from the current study support and extend the previous research. First, by providing significant effects of perception of social presence on attitude toward an apparel e-tailer, this study adds evidence to support the theory of social presence in an apparel e-tailing context (Reeves & Nass, 1996; Short & Williams, 1976). The findings suggest that

Table 2. Results of simple linear regressions

| Hypotheses | Model | Adj R^2 | IV | Std. β | t-value (p-value) | Hypotheses testing |
|---------------------------|--------------------|-----------|-----|--------------|-------------------|--------------------|
| H1a: SP \rightarrow ATT | ATT=SP+ ϵ | .27 | SP | .53 | 4.79 (<.001) | H1a supported |
| H1b: ATT \rightarrow PI | PI=ATT+ ϵ | .39 | ATT | .63 | 6.19 (<.001) | H1b supported |

IV=Independent variable; SP=Perceptions of social presence; ATT=Attitudes toward an e-tailer; PI=Patronage intentions

Table 3. Results of mediation analyses

| Hypotheses | Model | Adj R ² | IV | b | Std. Error | Std. β | t-value (p-value) | Hypotheses testing |
|---|-----------------------|--------------------|-----------|------------|------------|--------------|-----------------------------|--------------------|
| H1c: SP \rightarrow ATT \rightarrow PI | PI=ATT+ ϵ | .39 | ATT | .84 | .14 | .63 | 6.18 (<.001) | H1c supported |
| | PI=SP+ ϵ | .31 | SP | .75 | .14 | .57 | 5.27 (<.001) | |
| | ATT=SP+ ϵ | .27 | SP | .52 | .11 | .53 | 4.79 (<.001) | |
| | PI=SP+ATT+ ϵ | .45 | SP ATT | .43 .61 | .15 .15 | .33 .46 | 2.89 (<.01) 4.03 (<.001) | |
| H2: SP \rightarrow Trust \rightarrow ATT | ATT=T+ ϵ | .54 | T | .97 | .11 | .74 | 8.49 (<.001) | H2 supported |
| | ATT=SP+ ϵ | .27 | SP | .52 | .11 | .53 | 4.79 (<.001) | |
| | T=SP+ ϵ | .25 | SP | .39 | .09 | .51 | 4.60 (<.001) | |
| | ATT=SP+T+ ϵ | .57 | SP T | .20 .83 | .10 .13 | .20 .64 | 2.03 (<.05) 6.43 (<.001) | |
| H3: SP \rightarrow A \rightarrow ATT | ATT=A+ ϵ | .36 | A | .60 | .10 | .61 | 5.90 (<.001) | H3 supported |
| | ATT=SP+ ϵ | .27 | SP | .52 | .10 | .53 | 4.79 (<.001) | |
| | A=SP+ ϵ | .21 | SP | .48 | .11 | .48 | 4.16 (<.001) | |
| | ATT=SP+A+ ϵ | .43 | SP A | .31 .46 | .11 .11 | .31 .46 | 2.78 (<.01) 4.15 (<.001) | |

IV=Independent variable; SP=Perceptions of social presence; ATT=Attitudes toward an e-tailer; PI=Patronage intentions

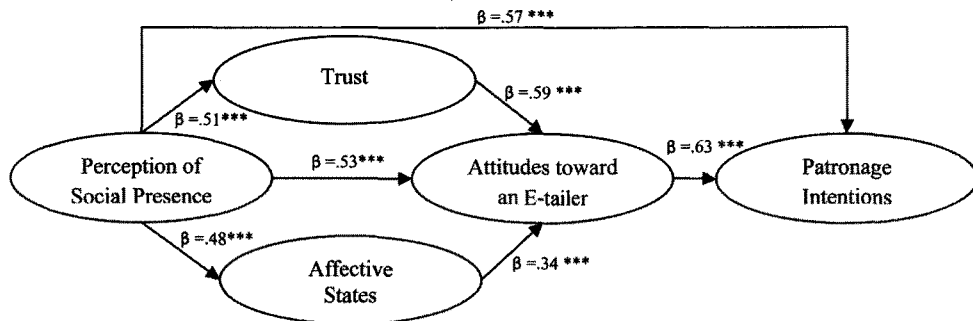


Fig. 3. Hypothesized model with standardized β coefficients.

consumers' feelings of "socialness" play a significant role in influencing online apparel consumers' attitude formation. To build positive relationships with consumers, apparel e-tailers should seriously consider how to market their website appropriately to induce online consumers' perception of social presence. For example, apparel e-tailers may need to consider presence-inducing web features and design factors when they launch their e-commerce websites. Such features would include experience enabling technologies, online chat, multi-media streaming service for 3-dimensional product view, VoIP (Voice over IP) call features, and, more importantly, a substantial collection of user reviews to further promote user side social interac-

tion. These technology embedded features share similar system architectures with web interactivity technology. The web interactivity in the past has been designed to promote vividness of websites in a limited scope. However, as bandwidth of the Internet connection has developed further, more features are incorporated with the Internet, and it leads users departed from asynchronous use of web sites to a synchronous and interactive use through real-time chat, VoIP, and online user reviews. User reviews, particularly for the apparel industry, has shown to influence consumers' decision making process predominantly compared to the manufacturers' marketing claims. Furthermore, this technological advancement

contributes to extend the reach of fashion e-tailers' promotion and their various marketing messages as well. Therefore, fashion e-tailers and website designers should strategically determine their web features and design factors under consideration of how they enhance consumers' perception of social presence to a certain level.

Second, this paper confirms the hierarchical structure of consumer responses that supports the consequential relationships to an e-tailer (Day, 1969; Oliver, 1999). Many previous studies employ either attitudes or patronage intentions (e.g., Hassanein & Head, 2006; Wang et al., 2007). However, the literature on relationships has suggested that the two constructs are distinctive, hierarchical, and both are necessary to shape true relationships (Day, 1969; Oliver, 1999), which is also supported by the current study. Thus, future studies are recommended to incorporate the hierarchical structure of consumer responses toward an e-tailer.

The mediating effect of online consumers' attitudes toward an e-tailer implies that consumers are more likely to shop at a particular e-tailer, where they perceive a higher level of social presence, since the e-tailer influences consumers to possess more favorable attitudes toward the e-tailer. As shown in this study, marketing activities to increase consumers' positive attitudes should be critically viewed as a channel of behavioral responses (Korgaonkar et al., 1985). Since favoring attitude is needed for patronage intentions, e-tailers are recommended to spend their efforts on how to formulate positive attitudes. Without positive attitude, it may be hard to develop a long-term relationship only with behavioral-focused promotions such as providing coupons, discount, or bundling sales.

The mediation analysis shows that attitude is not a perfect but a partial mediation in the relationship between social presence and patronage intention, suggesting the variance of patronage intention is directly explained not only by individuals' attitude toward an e-tailer but also by their perception of social presence or by other factors in the relationship. There are possible explanations about the effect of social presence on patronage intentions. Enhanced social presence at an e-tailer increases individuals' level of involvement

(Fortin & Dholakia, 2005). With the higher level of involvement, consumers are more willing to interact with features of the e-tailer, which may lead to their patronage intentions. Also, the presence-inducing factors, interactivity and vividness, are used to grab consumers' attention and to make them to stay longer at a particular website. Thus, the perception of social presence induced by interactivity and vividness influences consumers to pay attention to the e-tail website and to spend more time at the e-tailer. Moreover, as the enhanced social presence influences consumers to perceive online shopping easier (Gefen & Straub, 2003), consumers are more likely to shop with the e-tailer, which makes their shopper easier. Furthermore, the enhanced social presence may direct consumers' attitude positively toward apparel products displayed on the website, which may influence them to exhibit patronage intentions not only through their attitude toward the e-tailer but also through their attitude toward the products at the e-tailer.

Third, implied by a previous study (Hassanein & Head, 2006), trust serves as a mediator in the effect of online consumers' perception of social presence on their responses toward an e-tailer. Furthermore, this paper extends a previous model by adding affective states as another mediator. The mediation model of the current study extends the theory of social presence in an e-tailing context by providing underlying explanations behind the positive effects of social presence on consumers' responses toward an e-tailer: consumers' beliefs and affective states are influenced by their perception of social presence, which consequently influences their relationships with the e-tailer. Additionally, we compared the effects of the two mediators on attitudes to probe which mediator had a stronger impact on attitudes. The stepwise multiple regression analysis showed that, in the model having both trust and affective states ($\text{Adj } R^2 = .63$), the effect of trust ($\text{Std. } \beta = .59, p < .001$) is stronger than the effect of affective states ($\text{Std. } \beta = .34, p < .001$) on participants' attitudes toward the e-tailer. Considering online consumers' perception of risk toward shopping online, the stronger effect of trust than affective states is understandable. However, it is not conclusive at this point whether the stronger effect of trust

in this study implies the stronger effect of cognition than emotions as a mediator, which should be considered by future research.

Since the focus of the study was not in delineating website characteristics that possibly induce consumers' perception of social presence, the stimuli websites were developed at two levels only to create variations in participants' perception of social presence. Therefore, it is beyond the ability of this study to understand the properties of presence-inducing website characteristics. Future research is needed to explain which cues on the website can possibly have a greater effect on producing perceptions of social presence.

The present study has several limitations, which should be considered when interpreting the observed findings. One limitation is the use of a student sample. Since students are generally poor surrogates for the general consumers, the study using a student sample restricts the external validity. Second limitation is the sample size, which reduces the power of significant tests. Due to the small sample size, there was a restriction to employ structural equation modeling, in which possible errors are expected to be reduced. Third limitation is the use of a mock-website, which reduces the realness of the shopping environment and can cause variability issues in such constructs, attitude and behavioral intention, as the mock site potentially alters them by reduced realness. Finally, only one product type, apparel, was considered in this study. Due to the nature of the product, it needs cautious when the observed results are interpreted in the context of other types of product.

References

- Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science*, 27(2), 184–206.
- Barlow, A. K. J., Siddiqui, N. Q., & Mannion, M. (2004). Developments in information and communication technologies for retail marketing channels. *International Journal of Retail & Distribution Management*, 32(3), 157–163.
- Baron, R., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Biocca, F. (1997). The cyborgs dilemma: Progress embodiment in virtual environments. *Journal of Computer-Mediated Communication*, 3(2). Retrieved May 18, 2010, from <http://jcmc.indiana.edu/vol3/issue2/biocca2.html>
- Cowles, D., & Crosby, L. A. (1990). Consumer acceptance of interactive media in service marketing encounters. *Service Industries Journal*, 10(3), 521–540.
- Coyle, J. R., & Thorson, E. (2001). The effects of progressive levels of interactivity and vividness in Web marketing sites. *Journal of Advertising*, 30(3), 65–77.
- Dabholkar, P. A. (1994). Incorporating choice into an attitudinal framework: Analyzing models of mental comparison process. *Journal of Consumer Research*, 21(1), 100–118.
- Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science*, 32(5), 554–571.
- Day, G. S. (1969). A two-dimensional concept of brand loyalty. *Journal of Advertising Research*, 9(3), 29–35.
- Donovan, R. J., & Rossiter, J. R. (1982). Store atmosphere: An environmental psychology approach. *Journal of Retailing*, 58(1), 35–57.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. New York: HBJ.
- Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Empirical testing of a model of online store atmospherics and shopper responses. *Psychology & Marketing*, 20(2), 139–150.
- Evans, J. R., & Mathur, A. (2005). The value of online surveys. *Internet Research*, 15(2), 195–219.
- Fortin, D. R., & Dholakia, R. R. (2005). Interactivity and vividness effects on social presence and involvement with a web-based advertisement. *Journal of Business Research*, 58(3), 387–398.
- Freeman, L. (2000). Keeping 'em happy. *Marketing News*, 34(10), 21.
- Fulk, J., Steinfield, C. W., Schmitz, J., & Power, J. G. (1987). A social information processing model of media use in organizations. *Communication Research*, 14(5), 529–552.
- Gefen, D., & Straub, D. (2003). Managing user trust in B2C e-services. *e-Service Journal*, 2(2), 7–24.
- Gefen, D., & Straub, D. W. (2004). Consumer trust in B2C e-commerce and the importance of social presence: Experiments in e-products and e-services. *Omega*, 32(6), 407–424.
- Grewal, D., Baker, J., Levy, M., & Voss, G. B. (2003). The effects of wait expectations and store atmosphere evaluations on patronage intentions in service-intensive retail stores. *Journal of Retailing*, 79(4), 259–268.
- Hair, J. F. J., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2005). *Multivariate data analysis* (6th

- ed.). Upper Saddle River: Prentice Hall.
- Hassanein, K., & Head, M. (2005-6). The impact of infusing social presence in the Web interface: An investigation across product types. *International Journal of Electronic Commerce*, 10(2), 31–55.
- Holzwarth, M., Janiszewski, C., & Neumann, M. M. (2006). The influence of avatars on online consumer shopping behavior. *Journal of Marketing*, 70(4), 19–36.
- Jeong, M., & Lambert, C. U. (2001). Adaptation of an information quality framework to measure customers' behavioral intentions to use lodging Web sites. *International Journal of Hospitality Management*, 20(2), 129–146.
- Keng, C.-J., & Lin, H.-Y. (2006). Impact of telepresence levels on internet advertising effects. *CyberPsychology & Behavior*, 9(1), 82–94.
- Kim, J., & Forsythe, S. (2009). Adoption of sensory enabling technology for online apparel shopping. *European Journal of Marketing*, 43(9/10), 1101–1120.
- Korgaonkar, P. K., Lund, D., & Price, B. (1985). A structural equations approach toward examination of store attitude and store patronage behavior. *Journal of Retailing*, 61(2), 39–60.
- Laaksonen, M. (1993). Retail patronage dynamics: Learning about daily shopping behavior in contexts of changing retail structures. *Journal of Business Research*, 28(1/2), 3–174.
- Lewis, J. D., & Weigert, A. (1985). Trust as a social reality. *Social Forces*, 63(4), 967–985.
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MA: Massachusetts Institute of Technology.
- Moon, Y. (2000). Intimate exchanges: Using computers to elicit self-disclosure from consumers. *Journal of Consumer Research*, 26(4), 323–339.
- Moorman, C., Deshpande, R., & Zaltman, G. (1993). Factors affecting trust in market research relationships. *Journal of Marketing*, 57(1), 81–101.
- Mukherjee, A., & Nath, P. (2007). Role of electronic trust in online retailing. *European Journal of Marketing*, 41(9/10), 1173–1202.
- Nass, C., Moon, Y., & Green, N. (1997). Are machines gender neutral? Gender-stereotypic responses to computers with voices. *Journal of Applied Social Psychology*, 27(10), 864–876.
- Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, 63(4), 33–44.
- Pan, Y., & Zinkhan, G. M. (2006). Determinants of retail patronage: A meta-analytical perspective. *Journal of Retailing*, 82(3), 229–243.
- Quarterly Retail E-Commerce Sales: 4th Quarter 2009. (2009). *U.S. Census Bureau*. Retrieved April 1, 2010, from <http://www.census.gov/retail/mrts/www/data/pdf/09Q4.pdf>
- Reeves, B., & Nass, C. (1996). *The media equation: How people treat computers, television, and new media like real people and places*. New York: CSLI Publications.
- Reichheld, F. F., & Scheffer, P. (2000). E-loyalty. *Harvard Business Review*, 78(4), 105–113.
- Rice, R. E. (1992). Task analyzability, use of new media, and effectiveness: A multi-site exploration of media richness. *Organization Science*, 3(4), 475–500.
- Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research*, 15(3), 325–343.
- Short, J., & Williams, E. (1976). *The social psychology of telecommunication*. London: Wiley.
- Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Consumer trust, value, and loyalty in relational exchanges. *Journal of Marketing*, 66(1), 15–37.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equations models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290–312). Washington, DC: Sociological Association.
- Steuer, J. (1992). Defining virtual reality: Dimensions determining telepresence. *Journal of Communication*, 42(2), 73–93.
- Straub, D., & Karahanna, E. (1998). Knowledge worker communications and recipient availability: Toward a task closure explanation of media choice. *Organization Science*, 9(2), 160–175.
- Wang, L. C., Baker, J., Wagner, J. A., & Wakefield, K. (2007). Can a retail Web site be social? *Journal of Marketing*, 71(3), 143–157.