The Effect of e-scape on Internet Shopper's Cognition, Emotion, and Behavior Responses

Sang Hee Kim[a] and Joon Koh[b]

College of Business Administration, Chonnam National University
300 Yongbong-dong, Buk-gu, Kwang-Ju, 500-757 Korea
Tel: +82-62-530-1458[a],1459[b] Fax: +82-62-530-1449, E-mail: {ksh2851, kjoon}@chonnam.ac.kr

Abstract

By investigating Internet shopping malls from a viewpoint of environmental psychology, this study tries to expand the subject of servicescape into the Internet rather than to confine it to physical space. This study empirically validates the effect of e-servicescape (hereinafter e-scape) on customers' cognitive and emotional responses which subsequently can lead to customers' behaviors. An analysis of 490 questionnaires found that e-scape influences the emotional and cognitive responses, ultimately triggering customers' behaviors. We also found that the effects of e-scape on customers' behavior may be mediated by customers' internal responses. Based on the analysis result, servicescape management is important on the Internet just as it is in physical space. Concepts such as e-scape management can be one of the effective strategies to make an Internet shopping mall distinguishable from other Internet shopping malls.

Keyword: Servicescape, e-scape, emotion, cognition, customers' behavior

Introduction

The Internet has transformed a company's business development into a new mode, suggestive of this new environment with attributes of market globalization, the spread of information technology and networks, and appropriate for the economy of an information-based age. The Internet is also changing customers' consumption behaviors, thereby increasing the tendency to make a purchase via a new medium of the Internet rather than a purchase through a customer's movement in a physical store (Luo and Seyedian 2003-2004). Transactions are possible without direct contact using the Internet, which enables customers to be freed from requiring large amounts of time and specific spaces (Eroglu et al. 2001; Sharma and Sheth 2004).

Since the Internet is a relatively new medium by which a great deal of information is offered but with no direct personal contact with a seller, it is a different shopping environment from that of existing physical spaces (Degeratu et al. 2000). In such a virtual environment, customers are likely to need clues for evaluating goods, services, or many attributes and to use such clues to evaluate attributes of the Internet shopping mall. Environmental psychology considers the environment as being an important factor affecting human beings' internal evaluation. Some of these findings are that the store environment influences evaluation of in-store attributes, the amount of sales in a store, customer satisfaction, and behavioral intention (Dawson et al. 1990; Donovan and Rossiter 1982; Donovan et al. 1994; Mano and Oliver 1993; Spangenberg et al. 1996). Likewise, previous studies on shopping in physical spaces have indicated that the in-store environment exerts greater effects on the purchase decision than the service itself does, directly triggering customers' behaviors, attitudes and the emotions that they experience (Bitner 1992; Baker 1987; Wakefield and Blodgett 1996). It can be said that such an in-store environment is servicescape. Since service is fundamentally characterized by intangibility, a strategy to use a visible clue to make it tangible is very important in increasing customers' attitudes and behavioral intention.

Most of the researchers have missed the fact that evaluation of the attributes in the context of a shopping mall may vary by stimuli of the Internet environment. Bitner (1992) maintained that the type of industry with little interaction between a customer and an employee is more likely to be influenced by a service environment, which is because an employee is excluded from the list of customers' service evaluation. Therefore, the concept of servicescape is important even in an Internet shopping mall.

Also, how to present it can affect customers' evaluation on attributes of a shopping mall, which ultimately leads to their purchase intention, staying at a shopping mall, and revisit intention. Now we define the term of e-sevicescape (hereinafter e-scape) as an environmental stimulus of an Internet shopping mall that facilitates interactions between an Internet shopping mall and a customer in the course of Internet shopping.

The purpose of this study is to define the concept of e-scape and to examine how e-scape affects customers' cognition and emotion and then such customers' internal responses lead to customers' behavior. This study intends to provide a theoretical basis on e-scape as an important variable to provoke customers' responses in Internet shopping malls and to empirically validate them.

Theoretical Background and Hypotheses

Theoretical Background

To investigate relations among environmental stimuli, organisms' internal responses, and behavioral responses, this study introduces the stimulus-organism-response theory

(S-O-R theory) advocated in the area of environmental psychology. The S-O-R theory is about relations among a stimulus, an organism, and a response: a stimulus is the environment; an organism is a customer in this environment; and a response is a behavior conformed to the environment. First, a stimulus means a multi-dimensional environment. Stimulus clues which have been investigated in the field of marketing include music, color, illumination, fragrance, design, crowdedness, cleanliness, and spatial arrangement. Second, an organism is caused to make internal responses by such a stimulus. These responses include the experience of some kinds of emotion caused by the stimuli, evaluations of product price or quality, and so on. This stimulus is acknowledged ultimately with a thoughtful response, rather than having human beings receive such a stimulus passively. The stimulus is directly connected to a response of an individual (Bellizzi et al. 1983). Third, behavioral responses may include approach and avoidance behaviors: the level of product inquiry, the amount of time for a stay at a store, the intention to visit a store, interaction with people in the store, and the expenditure have been suggested in the field of marketing (Bitner 1992; Donovan and Rossiter 1982; Ridgway et al. 1990; Yalch and Spangenberg 1988; 1990).

On the basis of the S-O-R theory, this study proposes the concept of e-scape, which is an environmental factor of an Internet shopping mall, as a stimulus clue (S), cognitive responses for evaluation of attributes of a shopping mall, and emotional responses that customers experience as organisms' internal responses (O), and purchase, stay, and revisit intentions as behavioral responses (R) to investigate the relations among them. This study's intent is to validate that e-scape causes customers' internal responses (cognitive and emotional responses) and the responses ultimately influence customers' behaviors.

Environmental Stimulus
Online Servicescape: e-Scape
The Internet is a sensory medium with a visible factor. Environmental factors in the Internet environment might form a positive view of a shopping mall, stimulate access to a shopping mall, and exert great influences on a consumption experience as well as perception of other factors. Thus, differentiation of environmental factors in an Internet site can cause visibly contrastive stimuli and bring a higher level of perception than non-differentiated sites, thereby affecting formation of an image for a shopping mall. Since contact between an Internet shopping mall and a customer is mostly implemented via an Internet site, good construction and design of a site can be connected directly with the users' purchases and revisit intentions. After all, the e-scape of an Internet shopping mall is its environmental factor to facilitate interaction between a shopping mall and a customer. It is likely to exert significant effects on customers' consumption experiences as well as on evaluation of attributes of a shopping mall.

Most of the existing studies on an Internet shopping mall have been made with respect to the aspect of attributes of an Internet shopping mall rather than with an environmental

psychological perspective, which implies that there are few studies on e-scape. This study's investigation covers multilateral aspects of e-scape.

Interview Process
The interview process was based on the process suggested by Spradley (1979) which consisted of a total of seven stages. Before starting the first stage, informants (information providers) were selected based upon four criteria presented by Spradley (1979): Informants should have a thorough understanding of a subject; informants should currently belong to the cultural situation; informants should be able to take sufficient time for the interview; and informants had better be non-analytic if possible. Once informants were selected on the basis of these criteria, an interview started. First, a descriptive question was asked for the interview (e.g. "Tell me about the Internet shopping you are doing."). Such a descriptive question motivates the information providers to explain a situation from his/her own point of view. A descriptive question continued to be asked throughout the interview process. During this process, the content of the interview can be recorded. Both, field notes and recordings were used in this study. Second, a structural question was asked to discover domains which were units of informants' cultural knowledge and to determine how they systematized their knowledge (e.g. "What types of Internet shopping mall environments are there?"). Third, a contrast question was asked to identify differences among those domains and their meanings (e.g. "In Internet shopping mall environment, what differences are there between aesthetics and spatial layout and functionality?"). Fourth, a componential analysis was made to get a systematic understanding of attributes related to the informants' cultural symbols in terms of meaning (e.g. "Do you think that screen crowdedness, complexity, and speed belong to spatial layout and functionality?"). Fifth, a cultural theme was discovered. Sixth, previous literature was reviewed. A field description was provided for informants to confirm that this description reflected their viewpoints well and complemented their opinions. Seventh, finally, the interview was completed.

This study interviewed six undergraduates and white collar informants, in their mid- or late twenties. They had two to three years of Internet shopping experiences and all of them visited shopping malls more than once a day at that time. These informants had enough time to have a few interviews and seemed to enjoy explaining their shopping behaviors. They have purchased many products through Internet shopping included portable cassettes, books, cosmetics, printer inks, clothes, and peripheral devices. About five interviews were held over two and half months. The content of each interview was analyzed in order to be able to ask more concrete questions for the next interview. In addition, the study implemented discussions with research colleagues, use of proper reference data, repetitive confirmation, and confirmation with members to be free from researcher's subjective prejudice, securing reliability and validity of the interviews (Lincoln and Guba 1995).

Organism: emotional and cognitive states

Environment and Emotion

Out of the research areas on relations among the environment, emotional responses, and behaviors, the field of environmental psychology on interaction between environment and behaviors has tried to build valid frameworks with the concept of emotion. Mehrabian and Russell's (1974) affect model, most generally cited in the field of marketing, proposed that behaviors result from the emotional state formed under a given environment. In other words, an environmental stimulus causes emotion which then affects such behaviors as approach or avoidance. Russell and Pratt (1980) claimed that the environment, natural or artificial, arouses emotions, which are divided into two fundamental aspects: pleasure/displeasure and degree of arousal. An environment giving both pleasure and arousal is called exciting; on the contrary, an environment producing pleasure, but offering no arousal or liveliness, is called relaxing. The environment which gives both arousal and displeasure is called distressing while the environment providing both displeasure and insipidity is called gloomy. It is known that people want to stay longer and spend more money in an environment where they can get a feeling of pleasure (Donovan and Rossiter 1982).

There are some studies on comparing emotions experienced on the Internet with those experienced in physical space. Using the concept of "flow," Hoffman and Novak (1996) defined this emotion, flow as a "process of positive experience a consumer achieves while maintaining balance between skill and challenge during the process of interaction with a computer-mediated environment." They contributed to causing numerous Internet companies to take an interest in customers' experiences and their behaviors. Menon and Kahn (2002) stated that experiences in Internet shopping could provide customers with playfulness and stimuli like shopping at a physical store.

On the ground that the Internet is a medium that needs more positive participation than such media as TV and radio, Internet shopping sites may have an opportunity to provide visitors with flow or any emotional states. Recently even voice information was added to give a holistic, true experience covering the visual and auditory senses (Carpenter 1999).

Many of the prior studies made an empirical examination of relations between environmental clues and emotional responses (Babin and Darden 1996; Donovan and Rossiter 1982; Wakefield and Baker 1998). They mentioned that the perceived servicescape includes color, decoration, music, and other atmosphere factors. These factors influence the mood of people in a certain place and induce emotional responses directly.

Research on the Internet also involved the relations between a computer-mediated environment and customers' emotional responses and explored which site environment may stimulate emotional responses among customers (Menon and Kahn 2002). A few studies on such relationships suggest that an Internet site that permits quick, uncrowded, and easy navigation is more likely to encourage customers to enjoy themselves and satisfy them (Pastrick

1997). Relevant site design can be a factor to let customers feel good while an irrelevant design might cause customers to suffer from more confusion and even create negative emotion in them (Hoque and Loshe 1999; Loshe 1993; Nielsen 2000). Customers tend to show more positive responses to an Internet site with good design, high speed, or easy navigation (Eighmey and McCord 1998; Fram and Grady 1995).

H1: e-scape will be positively associated with customers' emotional response.

Environment and Cognition

A customer faces a variety of clues in a store environment. The clues are used for evaluating a store in service, quality of goods, price, and so on (Baker et al. 2002). This may be interpreted by inference theory: people tend to use an available clue in judging a thing that they have little knowledge of (Huber and McCann 1982; Nisbett and Ross 1980). Ward et al. (1992) found that consumers' inference on evaluation of in-store attributes was significantly associated with an environmental clue. Consumers tend to make decisions on purchasing based on inference from various informative clues in an environment where they have no accurate information on quality of goods or service (Bloom and Reve 1990).

An Internet shopping mall is a virtual store, not actual one, thereby making it difficult to give an accurate evaluation on traditional attributes provided in a physical shopping mall. While the Internet supplies a lot of information for users which differs from the information that consumers get during actual shopping in the physical space. In this case, consumers tend to search for a clue for inferring many attributes of an Internet shopping mall where environmental stimuli play the role of a useful clue for customers. Environmental clues or stimuli may become useful information in evaluating such attributes as quality of goods, price, and service (Bitner 1992; Gardner and Siomkos 1985; Nisbett and Ross 1980; Zeithaml 1988). Accordingly, the environment is regarded as a type of non-verbal communication. Such an environmental clue plays an important role in consumers' decision-making at the point of purchase. Baker (1987) as well as Bitner (1992) posited that the environment exerts great effect on customers' evaluation of service. Baumgarten and Hensel (1987) empirically validated that an environmental clue strongly influences consumers' perception of a service provider. Bellizzi et al. (1983) as well as Obermiller and Bitner (1984) found that in-store color exerted a significant effect on consumers' evaluation of the store and the store's goods. Mazursky and Jacoby (1986) also demonstrated that customers use the design of a store as an important clue for evaluating the quality of goods. Gardner and Siomkos (1985) identified that customers evaluate goods of the same brand more positively in case of better store design.

Like physical shopping, in Internet shopping, aesthetics, the ambient dimension, and spatial layout and functionality of a shopping mall could change the customers' evaluation on attributes of an Internet shopping mall. Eroglu et al.

(2001) argued that environmental factors of a medium could affect evaluation of goods or service. Montoya-Weiss et al. (2003) suggested that the navigation structure of a shopping mall as well as the attractiveness of a site would have positive effects on customers' evaluation of the quality of service of the Internet site.

H2: e-scape will be positively associated with customers' cognition response.

Behavioral Responses
Emotion, Cognition, and Behavioral Responses
Human beings show two polar behaviors to the environment: approach and avoidance (Mehrabian and Rusell 1974). Approach means staying, working, and getting a feeling of intimacy at a certain place. Avoidance, as the opposite to approach, involves reducing expenditure, trying not to stay long but leaving early, failing to work hard, or failing to assimilate. Donovan and Rossiter (1982) examined the concepts of enjoying shopping, being kind to others, spending money, and making a long search in shopping as examples of approach. Many of the previous studies on emotion and shopping behaviors (Babin et al. 1994; Dawson et al. 1990; Donovan and Rossiter 1982; Swinyard 1993) demonstrated that in-store emotion leads to such shopping behaviors as the amount of time for shopping, a sum of money for shopping, the revisit intention, and shoppers' satisfaction. Westbrook (1980) indicated that emotion increases preference in goods or stores. Donovan and Rossiter (1982) as well as Weinberg and Gottwald (1982) showed that preference and choice had a strong correlation with a passing emotional state. Also, among shoppers' emotional responses, playfulness induced by the store environment may influence such shopping behaviors as a sum of money for in-store shopping, the amount of time for shopping, and the revisit intention (Donovan and Rossiter 1982, Donovan et al. 1994, Forsythe and Bailey 1996).

Menon and Kahn (2002) found that the more playfulness customers experienced on an Internet site, the greater their intention to access the site. Some prior articles (Shaw et al. 1997; Harri et al. 1999) insisted that the increase in visual reality, commitment, and playfulness on the Internet triggers customers' approach behavior. In addition, the more spontaneous interest customers experienced on the Internet, the more approach behavior they then exhibited (Hoffman and Novak 1996). Reichheld and Schefter (2000) found that customers, experiencing satisfaction on the Internet, spend more money by revisits than six months ago.

H3: Customers' emotional response will be positively associated with customers' behavior intention.

Customers' cognitive evaluation on the attributes of a shopping mall would affect their behavioral responses. Many studies (Sirohi et al. 1998; Zeithaml 1988; Zeithaml et al. 1996) maintained that customers' evaluation of goods and service may lead to their behaviors including intention to visit a store. Holbrook (1996) observed that customers'

evaluations on the quality of goods and price could have an effect on their behavior toward a certain store. Those researchers have argued that goods, service, price, and information provided by a store determine customers' approach and avoidance behaviors.

This is indicated by research on Internet shopping; for example, Jarvenpaa and Todd (1997) empirically proved that customers' evaluation on such factors as value of goods, customer service, and information-providing affected purchase intention. Mark and Kelsey (1999) also posited that the properties of an Internet site including functionality, navigation, contents, style, and information on contact cause customers' responses. These imply that customers in the situation of Internet shopping evaluate attributes of an Internet shopping mall and, on this ground, decide on an approach or avoidance behavior.

H4: Customers' cognition response will be positively associated with customers' behavior intention.

Emotion and Cognition as a Mediator
Mehrabian and Russell (1974) suggested a model consisting of human response behaviors and organisms' internal responses as variables mediating them. They were concerned about examining the effects of environment on human behaviors based on the stimulus-organism-response (S-O-R) paradigm, or relations between stimuli of external environment (S) and approach/avoidance behavior (R), including the role of mediation by the state of organisms' internal responses induced by the external environment (O). The main focus of the model is on whether an organism's internal response is a mediator in relationships between stimuli (S) and responses (R). In their proposed model, the role of customers' cognition and emotion as a mediator has been considered as very persuasive. For example, background music in a store can amuse customers and induce them to evaluate goods or service in the store more positively. As a result, customers form purchase intention, want to stay at a store longer, and intend to visit again later. Therefore, effects of environmental stimuli of a store will be mediated by customers' emotion and cognition. Likewise, an Internet shopping mall with an uncluttered screen, rapid presentation, excellent sound effects, or higher aesthetic attractiveness would stimulate visitors to have more positive evaluation on goods and service provided in the shopping mall. The visitors then have more intention to stay at the Internet site longer, conduct a search, or visit again.

H5: The effect of e-scape on customers' behavior intention will be mediated by emotion and cognition.

Research Methods

Data Collection
To test the model and hypotheses, questions on each variable were established to collect data through a questionnaire. Prior to the survey, a pretest was conducted with 100 undergraduates; then, some questions that

respondents failed to clearly understand were revised. Two marketing professors were asked to review the questions to improve construct validity. On the basis of the resultant questionnaire acquired through this procedure, the hypotheses were tested. The survey was conducted with undergraduates who were participating in Internet shopping about twice a week on the average. These undergraduates were then allowed to visit a designated Internet shopping mall to shop freely for about thirty minutes in a laboratory. The designated shopping mall was the one that undergraduates knew but hardly visited. This helped to reduce inclinations in knowledge, involvement, and experience related to the shopping mall. Right after shopping, they were asked to answer questions. A total of 511 questionnaires were returned; among them, 21 copies with insincere responses were excluded. Thus, a total of 490 questionnaires were used for this study.

More than half of the total respondents were male (60.6%), and more than a half of the respondents (52%) conducted Internet shopping twice or three times a week on average. More than half of the total respondents (60.9%) have visited an Internet shopping mall for one to three years.

Measures

The measures for e-scape were items refined through an in-depth interview, a pilot test, and the pretest. The items presented by Mehrabian and Russell (1974) were used for emotion. The items of attributes of a shopping mall such as cognition were developed based on previous literature such as Jarvenpaa and Todd (1997), Price and Arnould (1999), and Suh and Kim (2002). Purchase, stay, and revisit intentions were used for customers' behavioral responses whose items were provided by Javenpaa et al. (2000) as well as Suh and Kim (2002).

Validity and Reliability

The reliability of the measurement items was tested for internal consistency by using Cronbach's alpha (α). Through the process that items decreasing reliability were removed, one item for aesthetics (refinement of sites), one for spatial layout and functionality (complexity of search channels), one for symbols and artifacts (discrimination of the icons), and one for cognition (good after-sales service) were deleted. As shown in Table 1, the scale was evaluated to be reliable, showing the satisfactory reliability level of Cronbach's α at 0.7 or above, which was generally accepted (Nunnally 1978). To refine the scale of constructs and examine convergent validity, principal component analysis was conducted with a Varimax rotation. As a result, it was divided into six factors— aesthetics, ambient, spatial layout and functionality, symbols and artifacts, cognition, emotion— having both discriminant validity and convergent validity with loading for individual items for each factor at 0.5 or above (See Table 1)

Table 1 Cronbach's α and the Factor Analysis Results

	Items	Cronbach's α	Factor loading
aesthetics	1. Uniqueness of a site		.623
	2. Aesthetic beauty of a site		.701
	3. Design superiority of a site		.833
	4. Freshness of a site	.83	.824
	5. Attractiveness of a site		.761
	6. Color superiority of a site		.639
	7. Refinement of a site*		-
ambient	1. Superiority in sound effects		.745
	2. Superiority in moving picture presentation	.73	.812
	3. Vividness of image presented		.765
spatial layout and functionality	1. Crowdness of a screen (R)		.714
	2. Complexity of a navigation channel (R)*		-
	3. Convenience in use	.76	.825
	4. Ease in browsing		.757
	5. High speed of navigation		.648
	6. Ease in channel navigation		.527
symbols and artifacts	1. Superiority in icon design		.761
	2. Visibility of the icons		.826
	3. Appropriateness of the icons		.814
	4. Discrimination of the icons*	.72	-
	5. Visibility of the labels		.508
	6. Content representation of the labels		.541
	7. Assistance in product search through labels		.660
cognition	1. Superiority in the quality of goods		.791
	2. Reliability in price		.787
	3. Good after-sales service*		.809
	4. Stability in the security system	.84	-
	5. Easy returns and refund policy		.698
	6. Good complaint management service		.749
	7. Observance of the delivery date		.725
emotion	1. Unhappy/happy		.926
	2. Annoyed/pleased		.859
	3. Unsatisfied/satisfied	.84	.738
	4. Melancholic/contended		.609
behavior intention	1. Purchase intention		.820
	2. Revisit intention	.84	.858
	3. Stay intention		.840

Results

The hypotheses of this study were tested by multiple regression analyses. A mediator regression analysis (Baron and Kenny 1986) was introduced to test the mediating effects of cognition and emotion on the relationship between e-scape and behavioral intention. Table 2 presents the results of the hypothesis test.

The effect of e-scape on emotion (See the Model I in Table 2). Aesthetics (β =.394, t=9.476, p<.01) and ambient (β =.143, t=3.452, p<.01) have a positive effect on emotion. However, neither spatial layout and functionality nor symbols/artifacts are significant in increasing emotion. Therefore, H1 is partially supported.

The effect of e-scape on cognition (See the Model I in Table 2). Aesthetics (β =.181, t=4.244, p<.01), ambient (β =.131, t=3.063, p<.01), and spatial layout and functionality (β =.159, t=3.550, p<.01) have a positive effect on cognition while symbols/artifacts (β =.078, t=1.712, ns) are not statistically significant. Thus, H2 is partially supported.

The effects of emotion/cognition on behavior intention (See the Model III in Table 2). Emotion (β =.133, t=3.005, p<.01) has a positive effect on behavior intention, which

supports H3. Also, cognition (β =.338, t=7.620, p<.01) has a positive effect on behavior intention, supporting H4.

The mediator effects of emotion and cognition (See the Model I, II, and IV in Table 2). This refers to a hypothesis that the effects of behavioral intention on e-scape would be mediated by emotion and cognition. The effects of e-scape on behavioral intention, should be weaker or insignificant when e-scape and emotion/cognition, are inputted at the same time than when they are not inputted. As for relations between e-scape and behavioral intention, the mediating effects of emotion and cognition were found to be significant, having partial mediator effects in the relationship. As a result, aesthetics, ambient, and spatial layout and functionality were found to be mediated by emotion and cognition in relations between e-scape and behavioral intention. However, symbols and artifacts were shown to have no significant effect on emotion and cognition but had direct effects on behavioral intention alone, suggesting that symbols and artifacts were not mediated by emotion and cognition. Consequently, H5 is partially supported.

Table 2 Results of Hypothesis Tests

Independent Variables		Dependent Variables				
		Emotion	Cognition	Behavior Intention		
		Model I		Model II	Model III	Model IV
Related Hypotheses		H1	H2		H3, H4	H5
e-sca pe	aesthetics	.394(9.476)[a]**	.181(4.244)**	.118(2.638)**	-	.022(.474)
	ambient	.143(3.452)**	.131(3.063)**	.157(3.501)**	-	.101(2.356)*
	spatial layout/functi onality	.058(1.361)	.159(3.550)**	.058(1.270)	-	.004(0.081)
	symbols and artifacts	.021(0.492)	.078(1.712)	.114(2.452)*	-	.088(1.999)*
emotion		-	-	-	.133(3.005)**	.100(2.081)*
cognition		-	-	-	.338(7.620)**	.307(6.781)**
F		32.499**	16.571**	10.512**	47.586**	18.136**
R^2(adjusted R^2)		.211(.205)	.120(.113)	.080(.072)	.163(.160)	.184(.174)

*: p < .05; **: p < .01.   [a]: Beta (t-value)

Discussion and Conclusion

The purpose of this study has been to discover the importance of servicescape in the context of Internet shopping mall, identify constituent factors of servicescape, and determine how these factors influence cognition, emotion, and customers' behaviors. For the purpose of the study, several hypotheses were developed and tested with empirical analyses. The results are summarized:

First, the roles of e-scape were identified through interviews. Such e-scape may stimulate customers' needs to navigate a site actively. The e-scape increases media richness by helping to overcome two-dimensionality. On the Internet, such e-scape provides motives to navigate a site on the Internet. Since it is relatively easier to adjust e-scape to customers' needs than adjust servicescape in a physical space, it could control the shopping environment for individuals and be a means of realizing the marketing concept of customers' satisfaction needs.

Second, the e-scape of an Internet shopping mall showed significant effects on cognition and emotion. An

interesting finding of the study is that while in e-scape, the aesthetics and ambient dimensions were found to influence both cognition and emotion with spatial layout and functionality affecting cognition. Symbols and artifacts had a significant effect on neither cognition nor emotion. This indicates that e-scape, in the sensory aspect such as aesthetics and ambient, may be an environmental stimulus which induces playful emotion. Furthermore, e-scape in the pragmatic aspect, such as spatial layout and functionality, can be interpreted as encouraging customers to give more positive evaluation on goods and service presented in a shopping mall. On the contrary, the results that symbols and artifacts had no relationship with cognition/emotion, implies that proper design of the icons, visibility of the labels, and good product search may neither stimulate customers to form positive emotion nor give positive evaluation on attributes of a shopping mall. However, symbols and artifacts were found to exert direct effects on customers' behaviors. From the results, we interpret that since icons or labels serve to improve accessibility of information for consumers, such convenience makes no contribution toward inducing playfulness or getting a positive consumer evaluation on goods or service but can only improve customers' behavioral intention such as encouraging them to stay and revisit a shopping site.

Third, cognition and emotion were found to not only increase behavioral intention but also mediate effects of e-scape on behavioral intention. This is consistent with the findings of the existing research on physical stores (Donovan and Rossiter 1982; Donovan et al. 1994; Dawson et al. 1990; Swinyard 1993; Yoo, Park and MacInnis 1998). It is noteworthy to confirm that cognition and emotion mediate the effects of e-scape on customers' behavioral intention. Practically, shopping website owners or operators should make efforts to encourage playfulness and positive evaluations on attributes of a shopping mall in order to enhance revisit intention, the amount of time for a stay, and intention to purchase. It is important to design Internet shopping sites in an aesthetically beautiful and refined way. Also, shopping site managers have to pay close attention to color selection with music suiting the image of a site and have to provide sound effects and moving pictures for Internet users. These can help site information be more vivid and simplify navigation channels. Proper management of customers' emotions and cognition can improve customers' behavioral intentions toward a shopping mall.

Managerial Implications

The major contribution of the study was to validate constituent dimensions and items of e-scape through qualitative research as well as quantitative research. This study developed a tool to measure environmental stimuli of an Internet shopping mall.

Based on the fact that e-scape affects customers' cognitive and emotional experience, we suggest several implications for marketing strategies related to an extrinsic clue, in the Internet shopping context, where it is difficult to use an intrinsic clue (Zeithaml 1988). To get customers to form positive emotions on an Internet shopping mall, the

site creators need to manage design, color, and the image of a shopping mall properly by making a site uncrowded and easy to navigate and with fast response time. Even though some studies on Internet shopping malls have addressed the cognitive factors of a shopping mall influencing customers' responses, they have failed to identify any antecedent variable which could affect customers' evaluation of the cognitive factors. In the case of Internet shopping, customers tend to evaluate cognitive factors presented by an Internet shopping mall and decide their behaviors such as purchasing or site staying. It is therefore meaningful to enhance the positive evaluation of cognitive factors in order to bring on an approach behavior and to reduce an avoidance behavior. To do this, website owners and operators should not only manage the attributes of a shopping mall thoroughly but also provide a stimulus clue for customers to give a more positive evaluation of even the same cognitive factors. Furthermore, our finding that a greater number of environmental factors exert more effects on customers' cognitive evaluation than on their emotional experience implies that more clues are used to evaluate goods and services if there is no actual interaction as on the Internet. Since the Internet is characterized by the fact that a computer screen plays a role of a display stand in the process of shopping and that a screen has a large role in the shopping process (Menon and Kahn 2002), customers are more likely to be affected by e-scape. This is because online customers, easily leaving the website whenever they experience low satisfaction, have to make their purchasing decisions predominantly based on the display of their PC screen without any help from employees. This study provides managerial implications for practitioners in that it identified the aspects of e-scape and validated the influence of e-scape on Internet shopping, letting managers know the importance of e-scape management.

On top of that, we proved that customers also experienced emotion in Internet shopping and that such emotion was an important variable which brought about customers' behavior. Most of the prior studies on Internet shopping overlooked the roles of emotional responses in investigating customers' behavior. This is due to the attempt to explain Internet shopping behavior from a rational and logical point of view; they failed to examine the essence of Internet shoppers' emotional responses. However, this study found that customers experience an emotional state even in Internet shopping and that such emotion is a variable exerting significant effects on customers' behavior just as a cognitive factor.

Finally, Internet shopping mall managers should keep an environmental viewpoint as well as cognitive and technical viewpoints of a site to provide a more comfortable shopping environment for shoppers. Servicescape is an important strategic factor in image differentiation for Internet shopping malls, providing opportunities to transmit an organizational image. Internet shopping mall managers, matching e-scape properly to target customers' taste, need to design attractive e-scape in terms of the desired image of their Internet site. It is necessary to adjust it to customers' needs and continue to change minor parts to create a better,

newer atmosphere rather than to simply maintain a site. Practically, to enhance the quality of e-scape would be a cost-effective strategy for website managers to increase sales in the context of Internet shopping since the managers could well decorate their site in a relatively low cost manner as compared with servicescape in offline stores.

Limitations and Future Research Directions

This study provided several implications for Internet service; however, it has limitations and therefore some directions for future research are evident: First, this study failed to include diverse age groups and a variety of occupations in the data we collected. Since the sample was concentrated on undergraduates in their twenties, this study had limitations in lack of generalization. This is because customers in their twenties may like more sensible aspects of shopping rather than on the practical aspect, which might have resulted in greater effects of environmental stimuli on customers' responses. Considering the recent increase in the use of Internet shopping malls among those in middle and old age, it is doubtful whether they would show similar tendencies as those customers in their twenties. Second, this study addressed servicescape, cognition, emotion, and behavioral intention in all Internet shopping malls. It is however necessary to subdivide Internet shopping malls to investigate relations among research variables in different industry settings. For example, when subdividing into game and information-proving sites to investigate relative effects of environmental stimuli on customers' responses, it could have greater implications on the practical side. Finally, it would be meaningful to classify customers' characteristics in examining the relationships among the research variables we introduced in this study. For example, they may vary by gender or by the sensation-seeking tendency. We suspect that gender or the sensation-seeking tendency might determine e-scape which affects cognitive/emotional responses or produce even mutual synergy effects between cognitive and emotional responses. Moreover, the use of a sample with customers who experienced online shopping on the Internet, excluding potential customers who did not experience online shopping yet, may restrict the generalization of the findings. More elaborate examinations are needed to further specify different strategic approaches by gender, customers' sensation-seeking tendencies, or online shopping experience that can be used in managing an Internet shopping mall. This differentiation could provide a great help for practitioners.

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