The Effect of Cultural and Demographic Factors on the Perception of Product Information among Korean College Students

한국대학생들의 상품정보인식에 대한 문화와 인구통계학적 요인들의 영향

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ABSTRACT

The purpose of this study is to investigate the effect of cultural and demographic factors (age and gender) on the perception of product information. The theoretical frameworks of interest in the current study are two cultural models: Hofstede's *individualism* (IND) and Hall's *context*. In examining the research questions, this research discovers that the cultural changes are occurring for the Korean young generation, even though Korean students are still within collectivistic culture. The correlation results suggest that the younger students have the higher individualism values compared to the older students. Using two multiple regression analyses (one set for high-context condition and one set for low-context condition), the study finds that cultural value and age significantly predicts the perception of product information in high-context (visual) condition. However, there is no significant difference in the perception of product information between male and female.

초 록

이 연구의 목적은 문화와 인구통계학적특성(나이와 성별)의 상품정보인식에 대한 영향을 조사하는 것이다. 연구에 사용된 문화이론은 Hofstede의 Individualism과 Hall의 context이론이다. 연구결과, 한국학생들은 아직도 집단주의(collectivism) 성향을 보이지만, 한국의 젊은 세대에서 문화적 변화가 발생하고 있다는 것을 확인하였다. 상관관계 분석결과를 통해 비교적 나이 어린 학생들이 나이 많은 학생들보다 더욱 개인주의(individualism)의 성향을 보였다. 두 세트(고맥락과 저맥락상황)의 다중회귀분석의 결과, 문화적특성과 나이가 고맥락(비쥬얼) 상황에서 정보인식에 영향을 미치는 결과를 확인하였다. 하지만 성별에 따른 정보인식의 차이는 없었다.

Keywords: information perception, culture, multiple regression, gender, age
정보인식, 문화, 다중회귀분석, 성별, 나이

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1. Introduction

Culture is the values shared by the individual members of a society (De Mooij, 1997). People in the same culture react similarly to a certain situation and judge certain behavior in the same way (Steinwachs, 1999). Information and culture could hardly be separated (Menour, 1983). Machlup and Mansfield (1983) consider the role of information in society and contend that information is culture specific. Machlup and Mansfield (1983) hypothesize that data are collected, organized, and communicated within a cultural context. Menou (1983) articulate the culturally intrinsic dimension of information, saying that "information is culture specific and consequently, is largely uncommunicable unless it has been acculturated" (p. 121).

New arguments claim that the Internet and modern technologies are changing national culture. The Internet is seen as enhancing cross-cultural communication and hence lowering the barriers between cultures (Nicovich & Cornwell, 1998). Rettie (2002) insists that the culture of the younger generation may differ from that of their parents' generation because the Internet is stimulating younger users' cultural change. Johnston and Parminder (1999) conclude that the culture of young web users is created beyond the level of region and nation through communication and socialization on the Internet. The new networking technologies and modern media seem increase cross-cultural fertilization because of connections with people who are geographically dispersed (Rettie, 2002; Triandis, 1988).

Also, scholars report the cultural changes of young people in Korea (Ahn, 1999; Cho et al., 2010; Han & Shin, 1999; Park & Kim, 2006). Han and Shin (1999) conclude that the westernized social, economic, and political systems are increasing individualistic cultural values in Korea society. Young college students in Korea are experiencing more strong cultural changes from collectivistic value to individualistic value (Ahn, 1999; Park & Kim, 2006). Korean young students seem to adopt individualistic cultural values from the college because of the westernized college culture in Korea (Cho et al., 2010).

However, in spite of the issues in the cultural changes of young people in Korea, few empirical studies have explored the effect of cultural and demographic factors in the access and understanding of information. Therefore, this research investigates the effect of cultural value, age, and gender on the perception of product information. A justification for choosing those factors is presented in the following section.

2. Literature Reviews

The theoretical frameworks of interest in the current study are two cultural models: Hofstede's (1980) *individualism* (IND) and Hall's (1976) *context*. Scholars suggest that individualism/collectivism is an important cultural theory for Asian studies (Kim, 1985; Bond, 1983; Miller, 1984).

2.1 Individualism and Collectivism

Hofstede (1980) defines individualism (IND) as "a preference for a loosely knit social structure in which individuals take care of themselves and their immediate families only" (p. 87). The interests of the individual prevail over that of the group in individualistic countries (Kim, 1985). Collectivism (COL) is "a tightly knit social organization in which individuals can expect other in-group persons to look after them" (Hofstede, 1980, 87). Koreans tend to consider themselves as part of the larger social context surrounding the individual (Kim, 1985). Scholars concluded that Korea is in a more collectivistic culture because of its ethnic homogeneity (An, 2003; Cho et al., 2010; Hofstede, 1980; Kashima et al., 1995; Kim, 1985; Taylor et al., 1997).

Hall (1976) defines context in one sense as "one of many ways of looking at things" (p. 98). Dervin (1996) defines context as "every possible attribute of person, culture, situation, behavior, organization, or structure" (p. 14) and "a necessary source of meaning" (p. 19). Hall explains low-context messages are analytical, explicit, and clearly articulated, whereas high-context messages are perceptive, indirect, and ambiguous (Taylor et al., 1997). Hall (1976) suggests that the United States and some Western European countries are low-context cultures and that Korea, Japan, and Taiwan are high-context cultures. Scholars support Korea's classification as a high-context culture (Gudykunst et al., 1987; Kim, 1985).

People in collectivistic cultures relatively use indirect communication because they are more concerned with issues of cohesive groups (Kim, 1994; Triandis, 1994). In contrast, conversation in individualistic cultures is more concerned with clarity (Kim, 1994), because individuals tend to use relatively direct communication (Triandis, 1988). Therefore, Individualism (IND) is related to context (Choi & Miracle, 2004). High-context communications, which use implicit and indirect messages, are predominant in collectivistic cultures, whereas low-context communications, which use explicit and direct messages, are predominant in individualistic cultures (Choi & Miracle, 2004; Hofstede, 1991).

Koreans have been classification as a collectivistic culture which uses implicit and indirect messages (Choi & Miracle, 2004; Hall, 1976; Hofstede, 1980; Kim, 1985; Taylor et al., 1997). However, new arguments claim that the modern technologies and westernized society are changing culture of younger people (Nicovich & Cornwell, 1998; Rettie, 2000; Triandis, 1998). The spread of Internet access and westernized college culture as well as massive levels of international travel may increase cultural change of Korean students (Ahn, 1999; Cho et al., 2010; Han & Shin, 1999; Park & Kim, 2006). Therefore, these cultural changes suggest that Korean younger students are likely to be identified as different culture in accordance with ages.

Gender differences could also be considered to investigate the cultural changes. Scholars reported the difference between male and female in individualism (Cho et al., 2010; Fischer & Manstead, 2000; Mortenson, 2002). Females concern for other people's feelings, creating nurturing relationships

with others, and maintaining interpersonal harmony than males (McClelland, 1975). Females also have socio-emotional and interpersonally oriented traits (Putrevu, 2010). However, males are considered self-centered and achievement oriented (Putrevu, 2010). Their judgments are more field independent than females (Bakan, 1966; Putrevu, 2010). Therefore, scholars suggest that males are higher in individualism whereas female are higher in collectivism (Cho et al., 2010; Fischer & Manstead, 2000; Mortenson, 2002).

The above discussion leads to the following research question:

- RQ1: Do Korean students have different COL/IND culture value with regard to age and gender?

2.2 Information in Visuals/Texts and Gender Differences

The way a message is conveyed (pictorially or verbally) has a significant effect on perception (Edell & Staelin, 1983). Barat (2007) explains "visual image plays an important mental or intellectual role, like information or data processing" (p. 340). In comparison to textual information, visual or pictorial information is complex and may offer each culture a different potential of understanding (Kim, 2012). Visual images are viewed as information in a symbolic form and are processed to form information message (Bellamy, 2006; Phillips, 1996; Scott, 1994). Exposure to visual information can necessarily lead to increase the processing of visual information (Kanuka & Szabo, 1999). Therefore, the development of the digital imaging technology has increased the scope of scholarly interest in visual perception (Barat, 2007; Yu, 2012). Visual perception is an ability of information gathering (Stern & Robinson, 1994) and a unity of sensory and personal experience (Barat, 2007; Yu, 2012). Scholars also have examined cultural differences in the processing of information in visuals (Beniger & Westney, 1981; Helgert, 1992; Jeon et al., 1999; Taylor et al., 1997).

Individualistic and collectivistic cultures show differences in the amount of information content in the visual materials. Felten (2008) demonstrates that there are somewhat clear difference in understanding visual information between young people in individualistic culture and collectivistic culture. Beniger and Westney (1981) found significant differences in the use of illustrations in the U.S. and Japan. Similarly, the proportion of indirect visual forms in Korean ads is significantly higher than in U.S. ads, while direct visual forms in U.S. ads are significantly higher than in Korean ads (Bu et al., 2009). In comparison with U.S. consumers, Korean consumers are likely to rely more on the contextual information (e.g., mood and tone) and less on the explicit claims (Choi & Miracle, 2004). Jeon et al. (1999) suggest Koreans infer more information from implicit and contextual cues in messages.

In addition, past empirical studies has demonstrated gender differences across a variety of task (Darley & Smith, 1995). Research in the area of cognitive psychology suggests that males are more

analytical and logical and females are more subjective and intuitive (Haas, 1979). Also, males use self-generated information and females use self- as well as other-generated information (Hunt and Einstein, 1981). According to the selectivity model, males often rely on a subset of salient cues in place of detailed message elaboration, but females attempt to assimilate all available information before rendering judgment (Meyers-Levy, 1989). Females tend to reach quicker interpretations of nonverbal cues than males (Kirouac & Dore, 1983). Therefore, the gender difference in the perception of visual information is an interesting factor to be considered.

The above discussion leads to the following research question:

- RQ2: Do COL/IND cultural value and age effect on the perceptions of visual and textual information of Korean students?
- RQ3: Do Korean students have the different perceptions of visual and textual information with regard to gender?

3. Method

The research method of this study was a between subjects factorial design. Data were collected in two identical procedures. One was performed with high-context (visual) condition and another with low-context (textual) condition. Data collection was designed to reflect marketplace settings in which consumers were interested in the test materials.

3.1 Sampling and Procedures

Subjects were selected from two universities in Seoul, Korea. Students were asked to participate in the study voluntarily. The subjects consisted of 204 undergraduate and graduate students. Data collection resulted in 197 usable responses as seven participants had a high number of missing items. Subjects were randomly assigned to one of two treatment groups that differ in types of context (high or low) condition. The total 98 students were assigned to the high-context (visual) condition and 99 students were allocated to the low-context (textual) condition.

As the test procedures, at first the subjects were greeted and seated in separate chairs in a classroom and received a folder including test instructions, a printed test material (9×12 inches), and questionnaires which were written in Korean. The subjects were asked to open their folders and read instructions carefully at first. Then, the researcher let the subjects read the test material for up to 10 minutes. The researcher then asked the subjects to complete a socio-demographic data sheet, on which they indicated their age, gender, major, and academic years. Next, the subjects were asked to respond to a questionnaire that allows the researcher to measure the subjects' perception of product information. The researcher asked the subjects to check all recognizable information from the test material. The subjects were allowed to see the test material during this procedure.

Following the measure of perception of product information, the test material was hidden from the subjects. The researcher asked the subjects to com-

plete the individualism-collectivism measurement questions. Finally, the subjects were debriefed, thanked, and dismissed.

3.2 Development of Test Materials

The test materials were newly created to ensure the validity of the research by avoiding the possible effects of prior brand attitudes, prior exposure, and prior purchase of the product. This study chooses mobile phones as the advertised product because they are a personal product widely purchased by and familiar to college students.

This research uses advertisements as test materials because advertising is a window to culture (Schutte & Ciarlante, 1998). For example, consumers from different cultural backgrounds may evaluate and perceive similar advertising messages differently (Kaynak & Mitchell, 1981). People usually understand the content of advertising messages by relating them to a particular culture and to the shared values or beliefs held in common by most people (Frith, 1997). Thus, this culture relevant characteristic of advertising makes it possible for researchers to conduct cultural studies with advertising. Also, since the test materials should contain both verbal and visual information reflecting the real situation to reduce a test bias, the researcher chose advertisements for test materials. The researcher was able to easily control and manipulate the advertising layout, pictures, and copy as potential information elements.

Two color print advertisements were developed for the two treatment conditions: high context and low context. To be classified as a high-context condition, the test material contained four or more types of information in its visual stimuli, symbols, and moods with simple texts, such as brand name and titles. To be classified as a low-context condition, the test material contained four or more types of information in its text with simple images (*see* Appendix).

3.3 Types of Information

The information in advertising provides meaningful cues to the audience by transmitting visual stimuli, symbols, and text. From the frameworks of Resnik and Stern (1977) and Taylor et al.'s (1997) study, the researcher established the new 18 types of information. Resnik and Stern's (1977) classification of information cues has been considered to produce generalizable codings of information in content analysis methodology (Franke, 1992). However, the researcher had to modify Resnik and Stern's framework, not only to apply it to this study, but also to include information commonly given in Korean advertising. The types of information should be considered informative and allow subjects to make intelligent choices among alternatives after reading the advertisement (Weun et al., 2004). The 18 objectively measurable types of information are shown in Appendix.

3.4 Pretest of Test Materials

Before the test was undertaken, the two versions of the test materials were examined to see whether

the materials were created in accordance with the intent of this study. As a first step, the researcher asked the five graduate students to check whether it was developed in accordance with the purpose of the study. The definitions of high-context and low-context conditions were explained to them. Then, they were asked to determine whether the test advertisements they saw were high contextual or low-contextual. Based on the result of the interviews, the high-context and low-context advertisements were redesigned. This process was repeated until a clear distinction was found between the high-context and low-context advertisements. The same five graduate students participated in each process to maintain consistency.

Next, a pretest was conducted to check the validity of the test advertisements. A total of ten undergraduate students who were blind to the hypotheses were asked to find all information from the final version of the high- and low- context advertisements. The pretest participants also were asked to report to the researcher any other types of information besides the 18 types of information provided, if any were found in the test advertisements. Each participant was asked to check the comprehensibility of the test materials. The final version of the high-/low-context advertisement was developed in accordance with the comments of the interviewed participants.

The researcher intentionally included up to twelve types of information in the test materials: value, size, quality, contents, new idea, connectivity, superiority, new product, image of users, performance, satisfaction, and company information. The six types of information (price, durability, availability, guarantees, safety, and special offer) were not contained in the test materials, but they were used to verify the validity of the test advertisements and test procedures.

3.5 Variables

3.5.1 Cultural value

To check the cultural value of Korean subjects, the individualism-collectivism scales identified by Oyserman et al. (2002) were employed for the current study because these scales tend to provide an objective assessment of culture. Oyserman's (2002) approch was to focus on "cultural values assessed at the aggregate level, emphasizing difference between cultural units" (p. 6). Oyserman (2002) measured how much they agreed with or how important they found a list of behaviors, attitudes, and value statements. This study typically asked students to rate those statements with a Likert scale (*see* Appendix).

Cultural value is operationalized through the individualism-collectivism level of participants. Cultural value of the research (COL/IND cultural value) was obtained by the ratio between collectivism and individualism; collectivism scores were divided by individualism scores. Higher COL/IND cultural value scores with over one indicate that the person has a higher level of collectivism. Lower COL/IND cultural value scores with below one indicate the person has a higher level of individualism.

3.5.2 Context conditions

The low-context condition in the test materials contains four or more types of information in its text with simple images. Low-context (textual) design uses explicit and direct messages that directly present information, facts, evidence related to product merits, and purchase reasons. In contrast, the high-context condition in the test materials contains four or more types of information in its visual stimuli, symbols, and moods with simple texts, such as brand name and titles. The high-context (visual) design uses implicit and indirect messages that are more artistic and sophisticated.

3.5.3 Perception of product information

The definition of *perception* used in the current study is borrowed from Schiffman and Kanuk's (1991) research, where they define it as "the process by which an individual selects, organizes, and interprets stimuli into a meaningful and coherent picture of the world" (p. 147). The messages in the test materials were conveyed pictorially or verbally to see a different effect on the perception of product information. To measure how students in different cultural values perceive information presented in test materials, the researcher asked participants to check all recognizable types of information from the test materials.

3.6 Socio-Demographic Information

Socio-Demographic information, such as an age, gender, major, academic years, and favorite cell phone brands were collected from subjects. These data were used to assess the similarity of the groups compared.

3.7 Data Analysis

Data were analyzed using SPSS for Windows 18.0. Frequencies and percentages for demographic variables were calculated. Means and standard deviations for all scales were also reported. This study defines a level of significance at an alpha of 0.05. Research questions were analyzed using multiple linear regression, T-test, chi-square, and correlations.

4. Findings

4.1 Demographic Characteristic

Demographic statistics were collected about each subject's gender, age, college years, and favorite cellphone brands. The final sample consisted of 93 males (42.7%) and 104 females (52.8%). Most of the subjects were undergraduate students: 138 undergraduate students (71%) and 59 graduate students (29%). The age of subjects involved 30 and over (15.7%), 26~29 (39%), 21~25 (32.5%), and 20 and under (12.8%). The students chose samsung phone as their favorite cell phone brand, but there was no overwhelming favorite brand for the students(<Table 1>).

〈Table 1〉 Demographic characteristics of subjects

Variable code	Type	number	percent
Gender	Male	93	47.2%
	Female	104	52.8%
	Missing	0	0
Class	Freshman	38	19.3%
	Sophomore	26	13.1%
	Junior	39	19.8%
	Senior	35	17.8%
	Graduate	59	29%
Age	20 and under	25	12.8%
	21~25	64	32.5%
	26~29	77	39%
	30 and over	31	15.7%
Favorite Brand	Samsung phone	67	34%
	Iphone	48	24.2%
	LG phone	33	16.8%
	Sky	27	13.8%
	HTC	6	3%
	Motorola	3	1.5%
	Others	6	3%
	Missing	7	3.7%
Total code		197	100%

4.2 COL/IND Cultural Value

The first research question of this study is to investigate that COL/IND cultural value would have a significant association with age and gender. This research employs the scales from Oyserman et al.'s (2002) study and modified those to determine subjects' level of individualism-collectivism. As explained, cultural value (COL/IND cultural value) is obtained by the ratio between collectivism and individualism; collectivism scores were divided by individualism scores.

The overall COL/IND cultural value for the Korean students is 1.245. This result indicates that the cultural value of Korean students is still collectivism. COL/IND cultural values between male and female students are compared statistically. Both Korean male and female students show collectivistic cultural value because their COL/IND cultural values are over one. Male students have little bit higher COL/IND cultural value (m=1.27) than Female students (m=1.22). However, the results of an in-

dependent-samples t-test indicate that there is no significantly different cultural value between male and female students (t=1.84, df=197, p>0.05).

〈Table 2〉 Gender difference in COL/IND cultural value

Gender	N	Mean	S.D	t-value
Male	93	1.27	.195	1.84
Female	104	1.22	.236	

Cultural change of Korean subjects is measured with the correlations between COL/IND cultural value, age, and gender of subjects. The correlation between COL/IND cultural value and age of subjects produces weak but significant results: r(197) = -.316, p<0.01. The younger students show the higher individualism and the older students show the higher collectivism. The significant result proves that the younger students tend to be moving to individualistic culture. However, the correlation between COL/IND cultural value and gender of subjects do not produce significant results with r(197) = -.131. This result do not support that males are higher in individualism whereas female are higher in collectivism.

〈Table 3〉 Correlation analyses

Variables	Age	Gender	COL/IND value
Age		.235	-.316**
Gender	.235		-.131
COL/IND value	-.316**	-.131	

** p<0.01

4.3 Perception of product Information

The second research question of this study is to investigate the effect of COL/IND cultural value and age on the perception of product information. To test this research question, two sets of two multiple regression analyses (one set for high-context condition and one set for low-context condition) were conducted.

The F -tests for the two analyses are significant for the high-context condition (R^2 = 0.263, F (2,95) = 16.91, p <0.01) and for the low-context condition (R^2 = 0.078, F (2,96) = 4.03, p <0.05), respectively. The beta weight of the COL/IND cultural value in the high-context condition is significant (β = -.316, p<0.01) and the beta weight of the age variable is significant (β = -.328, p<0.01). However, the beta weight of the COL/IND cultural value in the low-context condition is not significant (β = -.178, p = .145) and the beta weight of the age variable is not significant either (β = .156, p = .097). The result indicates that COL/IND cultural value and age significantly predicts the perception of product information only in high-context condition. Korean students who have higher collectivistic cultural value perceive more information from visuals, while there is no significant effect of cultural value on the perception of product information from texts(<Table 4>).

The third research question is to examine whether Korean students have the different perceptions of product information in visuals and texts with regard to gender. Overall, students perceive more information from low-context condition (m = 6.43)

〈Table 4〉 Regression analyses

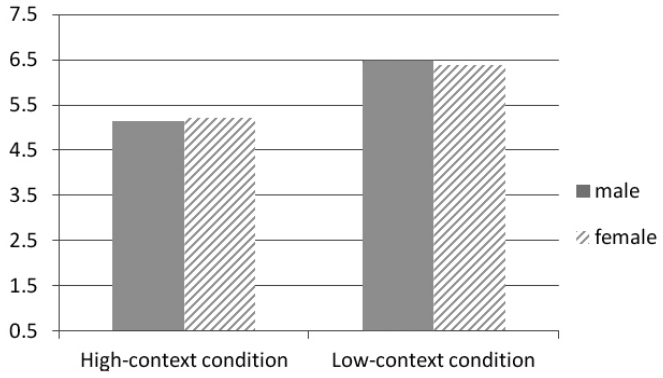
Variables	R^2	F	df	B	SE	β
Analysis1: High-context condition						
	.263	16.914**	(2,95)			
COL/IND cultural value				2.88	.837	.316**
Age				-.137	.038	-.328**
Analysis2: Low-context condition						
	.078	4.038*	(2,96)			
COL/IND cultural value				-1.901	1.135	-.178
Age				.088	.060	.156

** p<0.01, * p<0.05

than high context condition (m = 5.18). When examining male students' total perception of product information from the high-context condition, their means (m = 5.14) are almost same with female students' total perception of product information (m = 5.22). Female students also perceive almost same information from the low-context condition (m = 6.39) compared to male students (m = 6.47). Figure 1 shows the mean ratings of total perceptions as a function of gender and types of context condition.

The perception of product information in high-or low-context condition between male and female students is compared statistically. An independent- samples t-test does not show any significant results for the both condition: high-context condition (t = -.178, p = .859) and low-context condition (t = .680, p = .498).

As the additional analyses, female students perceive more information from the high-context condition in eleven categories (size, company info, value, quality, contents, connectivity, new idea, image of



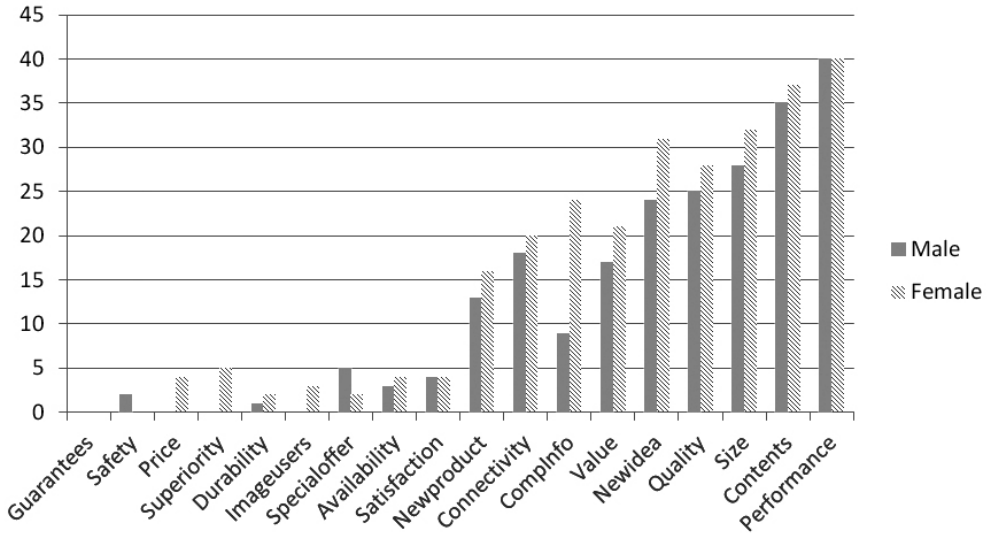
〈Figure1〉 Gender effect on the perception of product information

〈Table 5〉 Gender difference in the perception of product information

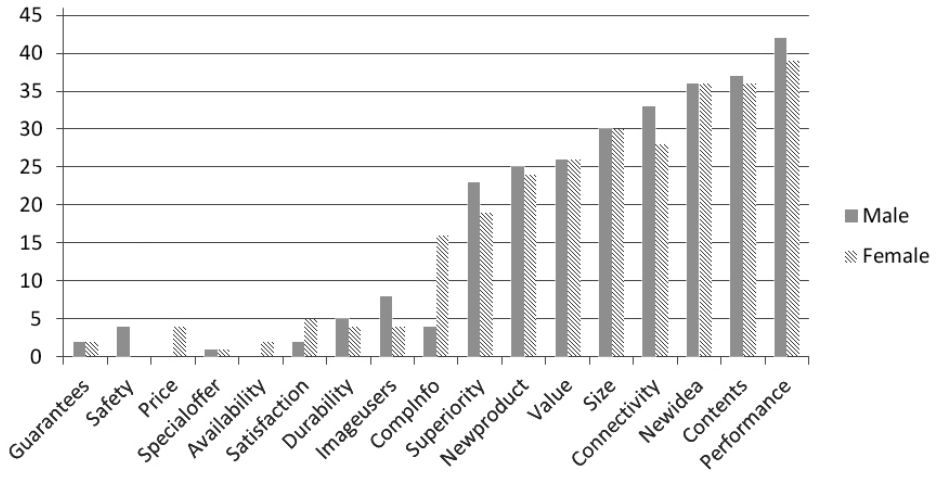
	Gender	N	Mean	S.D	t-value
High-context condition	Male	41	5.14	1.81	-.178
	Female	57	5.22	2.40	
Low-context condition	Male	52	6.47	2.32	.680
	Female	47	6.39	1.79	

users, new product, superiority, and performance) than male students. The execution of chi-square reveals that female students demonstrate a statistically significant difference in their perception of product information from the high-context condition compared to male students in contents category ($\chi^2 = 5.11$, $p = 0.024$) and company info category ($\chi^2 = 4.34$, $p = 0.037$)(<Figure 2>).

From the low-context condition, male students perceive more information in seven categories (image of users, connectivity, contents, quality, new product, superiority, and performance) compared to female students, while female students perceive more information in two categories (company info and user satisfaction) than male students. The execution of chi-square reveals that female students demonstrate a statistically significant difference in their perception of product information from the low-context condition compared to male students in company info ($\chi^2 = 10.63$, $p<0.001$)(<Figure 3>).



〈Figure 2〉 Perception of product information from high-context condition



〈Figure 3〉 Perception of product information from low-context condition

5. Discussion

The purpose of this study is to investigate the effect of cultural value, age, and gender on the perception of product information. In examining the research questions, this research discovers that COL/IND cultural value significantly predicts the perception of product information in high-context condition. The correlation results suggest that the younger students have the higher individualism values compared to the older students. However, gender differences do not show a significant association with COL/IND cultural value.

Scholars report the cultural changes of young people in Korea because of westernized society, modern technologies, and the decreasing importance of family and relatives (Ahn, 1999; Cho et al., 2010; Han & Shin, 1999; Park & Kim, 2006). This study partially supports the notion that the cultural changes are occurring for the Korean young generation. The test of RQ1 reveals that the younger students tend to be moving to individualistic culture from collectivistic culture compared to the older students. However, the COL/IND cultural value indicates that Korean students are still within the collectivistic culture. These results are consistent with the expectation of Hofstede's (1980/1983) cultural theories. The interests of the social relationship still prevail in Korea. Also, Korean students still keep their collectivistic cultural style that is formalized through childhood and adolescence while living with their parents (Cho et al., 2010).

With respect to RQ2, COL/IND cultural value effect on the perceptions of product information of Korean students in high-context (visual) condition. The older students who have more collectivistic cul-

tural value perceive more information from visuals than the younger students who have more individualistic cultural value. This result is also consistent with the expectation based on the cultural differences from the previous studies (Bang & Moon, 2002; Bu, Kim, & Lee, 2009; Choi & Miracle, 2004; Weun et al., 2004). The results confirm that consumers in collectivistic cultural value infer more information from implicit and contextual cues in messages.

Past empirical studies have attempted to delineate the significant differences between gender across a variety of tasks and traits (Darley & Smith, 1995). Past studies conclude that females tend to have better interpretations of nonverbal cues than males. However, the test of RQ3 reveals that there is no significant difference in the perception of product information between male and female. Females do not show quicker interpretations of nonverbal cues than males. However, female and male students interestingly perceive different types of information from each high- and low-context condition. Female students significantly perceive more information related to company info than male students in both high- and low-context condition. Considering the company info from the test materials was just company web address (smartio.com), this result confirm that male is more logical and female is more intuitive in information processing. Male subjects may not consider the company web address as the company info because it is too simple with no additional information. However, female subjects may understand the company web address as the company info.

This research represents one of a few comprehensive studies applying cultural theories in LIS field. Also, this study focuses on the internal cognition of individual users in a cultural context even though most LIS research in information behavior has concentrated on the external behavior of people and the interactions with an information system. The results of this study inform that culture and age effect on the perceptions of visual and textual information of Korean students. An appreciation of these factors gives library professionals the opportunity to be better prepared to develop programs and services to help students with their ability to understand visual and textual information and succeed at college. The standardized procedures and measures of the research method also allow it to be easily repeated in the future.

This research is not without limitations. Although college students in Korea constitute an important part of the mobile phone market, student samples are also often criticized for their lack of representability and for convenience sampling. While subjects are drawn from various age groups in two universities, differences may exist between them and older people from other geographical regions. Also, the shortcomings of this study are inherent to the test design which uses an artificial environment. The researcher tried to ensure that test advertisements were developed to reflect the real market situation, but those cannot mirror a real setting. The test design also needs to be improved to fully measure the effect of independent variables.

Future research should replicate this study using

other cultural theories. Hofstede (1980/1994) suggests masculinity, power distance, uncertainty avoidance, and long term/short term orientation. Hall (1966) explored two other cultural factors: time and space. Masuda and Nisbett (2001) developed the holistic/ analytic cultural dimension when comparing the context sensitivity of Japanese and Americans. As a test method, eye tracking method (Yang, 2009) to measure cultural differences in attention on information may possibly be applied to future research. Also, future research should replicate this study using another test procedures, materials, and subjects. Different test materials and media (i.e., TV, outdoor, Internet, and radio) with various product categories need to be developed.

References

An, D., & Kim, S. (2007). A first investigation into the cross-cultural perceptions of internet advertising. Journal of International Consumer Marketing, 20(2), 49-65.

An, D (2003). An empirical study of Hall and Hofstede's cultural values: A content analysis of internet advertising in Korea and the United States. Unpublished doctoral dissertation, University of South Carolina, Columbia, SC.

Ahn, S. (1999). A test of motivation-self-expansion-behavior model: Collectivism in Korea. Korean Journal of Social Psychology, 13(1), 121-164.

Bakan, D. (1966). The duality of human existence. Chicago, IL: Rand Mc-Nally.

Barat, A. H. (2007). Human perception and knowledge organization: Visual imagery. Library Hi Tech, 25(3), 338-351.

Bellamy, P. (2006). Cross-Cultural differences in preferences for visual information in technical documentation. Unpublished doctoral dissertation, University of Manitoba, Winnipeg, Canada.

Beniger, J. R., & Westney, D. E. (1981). Japanese and U.S. media: graphics as a reflection of newspapers' social role. Journal of Communication, 31(4), 28-36.

Biswas, A., Olsen, J. E., & Carle, V. (1992). A comparison of print advertisements from the United States and France. Journal of Advertising, 21(4), 73-81.

Bond, M. H. (1983). A proposal for cross-cultural studies of attribution processes. In M. H. Hewstone (Ed.), Attribution theory: Social and applied extensions (pp. 144-157). Oxford, England: Basil Blackwell.

Brumberger, E. (2011). Visual literacy and the digital native: An examination of the millennial learner. Journal of Visual Literacy, 30(1), 19-46.

Bu, K., Kim, D., & Lee, S. (2009). Determinants of visual forms used in print advertising: A cross-cultural comparison. International Journal of Advertising, 28(1), 13-47.

Cho, Y., Mallinckrodt, B., & Yune, S. (2010). Collectivism and individualism as bicultural values: South Korean undergraduates' adjustment to college. Asian Journal of Counseling, 17(1&2), 81-104.

Choi, Y., & Miracle, G. E. (2004). The effectiveness of comparative advertising in Korea and the United States. Journal of Advertising, 33(4), 75-87.

Darley, W. K., & Smith, R. E. (1995). Gender differences in information processing strategies: An empirical test of the selectivity model in advertising response. Journal of Advertising, 24(1), 41-56.

De Mooij, M. (1997). Global marketing and advertising: Understanding cultural paradoxes. Thousands Oak, CA: Sage.

De Saussure, F. (1959). Course in general linguistics, Philosophical Library, New York, NY.

Dervin, B. (1996). Given a context by any other name: Methodological tools for taming the unruly beast. In P. Vakkari, R. Savolainen, & B. Dervin (eds.), Information seeking in context (pp. 13-38). London, England: Taylor Graham.

Edell, J. A., & Staelin, R. (1983). The information processing of pictures in print advertisements. Journal of Consumer Research, 10(1), 145-161.

Fischer, A. H., & Manstead, A. S. R. (2000). The relation between gender and emotion in different cultures. In A. H. Fischer (Ed.), Gender and emotion: Social psychological perspectives (pp. 71-94). Cambridge, England: Cambridge University Press.

Felten, P. (2008). Visual literacy. Change, 40(6), 60-63.

Frith, K. T. (1997). Undressing the ad: Reading culture in advertising. New York, NY: Peter Lang.

Geertz, C. (1973). The interpretation of cultures. New York, NY: Basic Books.

Gudykunst, W. B., Yoon, Y., & Nishadsa, T. (1987). The influence of individualism-collectivism on perceptions of ingroup and outgroup relationships. Communication Monographs, 54(3), 295-306.

Hall, E. T. (1976). Beyond culture. New York, NY: Anchor Press/Doubleday.

Han, G., & Shin, S. (1999). A cultural profile of Korean society: From vertical collectivism to horizontal individualism. Korean Journal of Social and Personality Psychology, 13(2), 293-310.

Haas, A. (1979). Male and female spoken language differences: Stereotypes and evidence. Psychological Bulletin, 86, 616-626.

Helgert, J. P. (1992). Don't apply all copy chasers rules locally at least not in Japan. Business Marketing, 77(1), 34-35.

Hofstede, G. (1980). Culture's consequences: International differences in work-related values. Beverly Hills, CA: Sage.

Hofstede, G. (1983). Dimensions of national cultures in fifty countries and three regions. In J. B. Deregowski, S. Dziurawiec, & R. C. Annis (Eds.), Explications in cross-cultural psychology (pp. 335-355). Netherlands: Swets & Zeitlinger.

Hofstede, G. (2001). Culture's consequences: Comparing values, behaviors, institutions and organizations across nations. Thousand Oaks, CA: Sage Publications.

Hunt, R. R., & Einstein, G. O. (1981). Relational and item-specific information in memory. Journal of Verbal Learning and Verbal Behavior, 20, 497-514.

Kanuka, H., & Szabo, M. (1999). Conducting research on visual design and learning: Pitfalls and promises. Canadian Journal of Educational Communication, 27(4), 106-107.

Kashima, Y., Yamaguchi, S., Kim, U., Choi, S.-C., Gelfand, M. J., & Yuki, M. (1995). Culture, gender, and self: A perspective from individualism-collectivism research. Journal of Personality and Social Psychology, 69(5), 925-937.

Kaynak, E., & Mitchell, A. (1991). A comparative study of advertising in Canada, the United Kingdom and Turkey. European Journal of Marketing, 15(1), 1-9.

Kim, J. (2012). Information and culture: Cultural differences in the perception and recall of the information from advertisements (Unpublished doctoral dissertation). Florida State University, Tallahassee, FL.

Kim, K. (1985). Expression of emotions by Koreans and Americans. Korean Studies, 9, 38-56.

Kirouac, G., & Dore, F.Y. (1983). Accuracy and latency of judgment of facial expressions of emotions. Perceptual and Motor Skills, 57(3), 683-686.

Jeon, W., Franker, G. R., Huhmann, B. A., & Phelps, J. (1999). Appeals in Korean magazine advertising: A content analysis and cross-cultural comparison. Asia Pacific Journal of Management, 16(2), 249-258.

Johnston, K., & Parminder, J. (1999). The Internet as a virtual cultural region: Are extant cultural classification schemes appropriate? Internet Research, 9(3), 178-186.

Machlup, F., & Mansfiled, U. (1983). The study of information: Interdisciplinary messages. New York, NY: John Wiley & Son.

Masuda, T., & Nisbett, R. (2001). Attending holistically versus analytically: Comparing the context sensitivity of Japanese and America. Journal of Personality and Social Psychology, 81(5), 922-929.

McClelland, D. C. (1975). Power: The inner experience. New York, NY: Irvington.

Menour, M. J. (1983). Cultural barriers to the international transfer of information. Information Processing and Management, 19(3), 121-129.

Meyers-Levy, J. (1989). Gender differences in information processing: A selectivity interpretation. In P. Cafferata & A. Tybout (eds.), Cognitive and affective responses to advertising (pp. 219-260). Lexington, MA: Lexington.

Miller, J. (1984). Culture and the development of everyday social explanation. Journal of Personality and Social Psychology, 46(5), 961-978.

Mortenson, S. T. (2002). Sex, communication values, and cultural values: Individualism-collectivism as a mediator of sex differences in communication values in two cultures. Communication Reports, 15(1), 57-70.

Nicovich, S., & Cornwell, T. B. (1998). An Internet culture?: Implications for marketing. Journal of Interactive Marketing, 12(4), 22-33.

Olney, T. J., Holbrook, M. B., & Batra, R. (1991). Consumer responses to advertising: The effects of ad content, emotions, and attitude toward the ad on viewing time. Journal of Consumer Research, 17(4), 440-453.

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. Psychological Bulletin, 128(1), 3-72.

Park, Y., & Kim, U. (2006). Family, parent-child relationship, and academic achievement in Korea: Indigenous, cultural and psychological analysis. In U. Kim, K. Yang, & K. Hwang (Eds.), Indigenous and cultural psychology: Understanding people in context (pp. 421-443). New York, NY: Spring Science + Business Media.

Phillips, B. J. (1996). Defining trade characters and their role in American popular culture. Journal of Popular Culture, 29(4), 143-159.

Prensky, M. (2001). Digital natives, digital immigrants. On the Horizon, 9(5), 1-6.

Putrevu, S. (2010). Exploring the origins and information processing differences between men and women: Implications for advertisers. Academy of Marketing Science Review, 10, Retrieved April 05, 2013, from http://www.amsreview.org/articles/putrevu10-2001.pdf

Resnik, A., & Stern, B. L. (1977). An analysis of information content in advertising. Journal of Marketing, 41(1), 50-53.

Rettie, R. (2002). Net generation culture. Journal of Electronic Commerce Research, 3(4), Retrieved September 9, 2007, from http://www.csulb.edu/web/journals/jecr/p_i.htm

Rossman, M. L. (1994). Multicultural marketing: Selling to a diverse America. New York, NY: American Management Association.

Schiffman, L. G., & Kanuk, L. L. (1991). Consumer behavior (4th ed). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Schutte, H., & Ciarlante, D. (1998). Consumer behavior in Asia. New York, NY: New York University Press.

Scott, L. M. (1994). Images in advertising: The need for a theory of visual rhetoric. Journal of Consumer Research, 21(September), 252-273.

Steinwachs, K. (1999). Information and culture: The impact of national culture on information processes.

Journal of Information Science, 25(3), 193-204.

Stern, R. C., & Robinson, R. S. (1994). Perception and its role in communication and learning. In D. M. Moore, & F. M. Dwyer (Eds.), Visual literacy: A spectrum of visual learning (pp. 31-51). Englewood Cliffs, NJ: Educational Technology Publications.

Triandis, H. C. (1988). Collectivism vs. Individualism: A reconceptualization of a basic concept in cross-cultural psychology. In G. Verma & C. Bagley (eds.), Cross-cultural studies of personality, attitudes and cognition (pp. 60-95). London, England: Macmillan.

Triandis, H. C. (1994). Culture and social behavior. New York, NY: McGraw-Hill.

Taylor, C. R., Miracle, G. E., & Wilson, R. D. (1997). The impact of information level on the effectiveness of U.S. and Korea television commercials. Journal of Advertising, 26(1), 1-18.

Yu, X. (2012). Exploring visual perception and children's interpretations of picture books. Library & Information Science Research, 34(4), 292-299. http://dx.doi.org/10.1016/j.lisr.2012.06.004

[Appendix 1] Definition of information

Types of Information	Definition
Price	Refers to the amount the consumer must pay for the product or service. May be in absolute terms, like a suggested retail price, or relative terms; for example, what does the product cost?
Value	Refers to some combination of price and quality or quantity, as in better quality at a low price or best value for the dollar.
Quality	Refers to how good the product or service is; may refer to craftsmanship and/or attention during manufacture, use of quality (i.e., better, best) ingredients or components. For example, what are the product's characteristics?
Size	Refers to the physical size or capacity of the product. For example, how long, tall, wide, heavy, and what capacity to do particular size tasks
Durability	Information concerning how long the product will last without repair, service records, and other related items.
Contents	Information that may provide value for users in specific contexts/media. For example, what information and experiences can you identify from the product?
Availability	Any information concerning the place(s) where the consumer may purchase or otherwise obtain the product. For example, where can the product be purchased?
Guarantees/warranty	Refers to any information concerning the presence of a guarantee or warranty.
Safety	Information concerning the safety of the product; for example, what safety features are available with the product?
New ideas (new uses)	Refers to any information about a new way to use an established product. For example, is a totally new concept introduced in the ad?
Performance (multi-function)	Any information concerning the outcomes associated with the use of a product
Superiority claim	Information that claims the advertised product is better than competitive products or better than an older version of the advertised product in some particular ways
Connectivity (convenience in use)	Refer to the phone's ability to link with others. Information concerning the quality of its connectivity and the ease in which the product may be used.
Special offer or event	Information concerning special events such as sales, contests, two-for-one deals, or rebates
New product (improved features)	Refers to any information concerning a new product introduction, or new components, ingredients, and features of an existing product
Image of users (characteristics)	Refers to any information concerning the type(s) of individual(s) who might use the advertised product
User's satisfaction	Refers to any information concerning users' satisfaction, dedication, and preference for the advertised product
Company information	Refers to any information (e.g., name of company) about the image or reputation of the company that manufactures or distributes the product

Note. Sources: Resnik and Stern (1977, p. 51); Taylor et al. (1997, p. 17).

[Appendix 2] Test materials

〈High-context design〉

〈Low-context design〉

[Appendix 3] Questions-Culture test

Statement	강한 부정						강한 긍정
나는 남보다 내가 일을 더 잘하는 것이 중요하다고 생각한다.	①	②	③	④	⑤	⑥	⑦
나는 내 일을 가족의 일보다 더욱 중요하게 다루는 경향이 있다.	①	②	③	④	⑤	⑥	⑦
나는 다른 사람들과 많은 면에서 많이 다르다고 생각한다.	①	②	③	④	⑤	⑥	⑦
나는 내 개인사생활을 중시한다.	①	②	③	④	⑤	⑥	⑦
나는 내 의견을 항상 명확히 밝힌다.	①	②	③	④	⑤	⑥	⑦
나는 내 강점과 약점에 대해 매우 잘 알고 있다.	①	②	③	④	⑤	⑥	⑦
나는 다른 사람이 달성할 수 없는 일을 이루었을 때 매우 큰 자부심을 느낀다.	①	②	③	④	⑤	⑥	⑦

Statement	Strongly Disagree						Strongly agree
나는 다른 사람과 함께 시간을 보내는 것이 즐겁다.	①	②	③	④	⑤	⑥	⑦
나는 내 사회구성원을 도울 의무가 있다고 생각한다.	①	②	③	④	⑤	⑥	⑦
나를 잘 이해하려면 나의 가족이나 속한 그룹(단체)의 구성원들을 만나보면 알 수 있다.	①	②	③	④	⑤	⑥	⑦
무슨 결정을 할 때 나는 나의 속한 그룹(단체)원의 합의를 얻기 위해 노력한다.	①	②	③	④	⑤	⑥	⑦
무슨 결정을 내리기 전에 나는 다른 사람들과 상의를 하는 편이다.	①	②	③	④	⑤	⑥	⑦
나는 내가 속한 그룹(단체)의 권위를 인정한다.	①	②	③	④	⑤	⑥	⑦
가족원끼리는 약간의 희생이 있어도 서로를 의지해야 한다고 생각한다.	①	②	③	④	⑤	⑥	⑦

Note. Sources: Oyserman et al. (2002, p. 9).