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I am submitting herewith a thesis written by Jinhee Lee entitled "The effects of persuasion knowledge on consumers' responses to green advertising: Focusing on skepticism as mediator." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Communication and Information.

Eric Haley, Major Professor

We have read this thesis and recommend its acceptance:

Ronald E. Taylor, Roxanne Hovland

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The effects of persuasion knowledge on consumers' responses to green advertising:
Focusing on skepticism as mediator

A Thesis Presented for
the Master of Science
Degree
The University of Tennessee, Knoxville

Jinhee Lee
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Abstract

The purpose of this study is to examine the relationship between persuasion knowledge, skepticism toward green advertising, and consumers' responses: a) investigating how types of persuasion knowledge (i.e., agent, tactic, and topic) are related to two types of skepticism (i.e., advertising claims and advertisers' motives); b) indicating how both types of skepticism affect advertising credibility and attitudes; and c) exploring how the skepticism mediate between the persuasion knowledge and consumers' responses. To verify this relationship, 217 adults were surveyed, and the data was analyzed by multiple regression. The study suggested three main results. The first result showed that agent knowledge is positively related to the two types of skepticism, while tactic knowledge affects skepticism toward advertisers' motives. In addition, skepticism based on advertising claims negatively affects green advertising credibility and attitudes. Thus, agent knowledge is the strongest predictor of both types of skepticism, and skepticism based on advertising claims is the most influential determinant of consumers' responses. Lastly, there are no mediation effects of both skepticism between persuasion knowledge and consumers' responses. Based on the results of this study, suggestions regarding the marketing and advertising strategy of green products were addressed.

Key words: green advertising, consumer skepticism, persuasion knowledge, advertising credibility, advertising attitude

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Chapter 1

Introduction

During the past few decades, various environmental problems (e.g., climate change, resource depletion, and environment pollution) have surfaced as serious issues in the U.S. (Leonidou, Leonidou, & Kvasova, 2010; Mazar & Zhong, 2010). Moreover, environmental concern about environmental issues has gradually increased and leads people to behave pro-environmentally: participating in recycling, conserving energy, and purchasing eco-friendly products.

As a result of concern about these environmental issues, current society has become more environment-oriented. Many companies have discovered new opportunities in response. For example, the companies have started to produce eco-friendly goods (e.g., hybrid cars, photodegradable-plastic bottled waters, and energy efficient bulbs) and execute green communication (e.g., green advertising and sponsorship of pro-environmental events). In particular, the green advertising is considered an appropriate way to leverage consumers' environmental concern and responsibility for environmental protection and may lead to their green purchasing. In addition, these efforts help to establish a company's reputation as pro-environmental.

However, there is a difference between consumers' perceived environmental concern and desire to be environmentally responsible and actual green purchasing (Laroche, Bergeron, Tomiuk, & Forleo, 2002; Cleveland et al., 2012). In other words, although consumers understand that consumption of eco-friendly products is important to enhance the environment, they have ambiguous attitudes toward green marketing and thus are not likely to purchase green products. The difference may stem from consumers' skepticism towards green marketing communication

(Chang, 2011). Research suggests some consumers have doubts about a company's ulterior motives in conducting green marketing and question the trustworthiness of pro-environmental messages (Mayer & Scammon, 1993; Albayrak et al., 2011).

Much scholarly work has been done on the effect of skepticism on consumers' responses to green marketing. Consumers' skepticism negatively affects evaluation of green marketing and pro-environmental messages. Specifically, the skepticism makes ad messages less believable and triggers negative attitudes toward green products, brands, and advertising. In turn, this leads consumers not to purchase the products (Obermiller & Spangenberg, 1998; Chen & Leu, 2011).

Moreover, studies have suggested that consumers' knowledge of and experience with communication and the marketplace can be the basis of skepticism. In order to explain the relationship between consumers' knowledge and skepticism, the persuasion knowledge model proposed by Friestad and Wright (1994) has been widely applied. The model suggests three types of persuasion knowledge (agent, tactic, and topic) and explains why people tend to be skeptical of persuasive communication. Based on the model, prior studies have verified that persuasion knowledge is related to skepticism (Delome, 2009; Mangleburg, 1998; Taylor & Nelson, 2012). Specifically, consumers with high persuasion knowledge are more likely to be skeptical of persuasive communication and resistant to persuasive messages.

However, while the prior studies focused on the effect of the level of persuasion knowledge on skepticism, they gave little attention to how the three types of persuasion knowledge are related to consumers' information processing and persuasion resistance. Although relatively few studies have examined the fact that agent or tactic knowledge is a strong factor in affecting consumers' skepticism and persuasion resistance, with the effects varying depending on

context, the roles of the different types of persuasion knowledge have not been carefully considered.

In addition, although several studies have indicated that skepticism toward advertising derives from advertising claims and advertisers' motives (Boush, Freistad & Rose, 1994; Chang, 2011), the studies concentrated on only one type of skepticism (e.g., advertising claims) or examined skepticism of advertising claims mixed with skepticism of advertisers' motives. In particular, skepticism of advertisers' motives is expected to play an important role in green advertising because consumers may deliberate a company's intention to execute green marketing and try to decide whether that intention is self-serving or other-serving. Thus, the influence of skepticism about advertisers' motives on consumers' responses to green advertising will be addressed.

Types of persuasion knowledge and skepticism should be considered in order to understand the relationship between persuasion knowledge, skepticism, and consumers' responses to green advertising. The purpose of this study is to a) examine how three types of persuasion knowledge (i.e., agent, tactic, and topic) are related to two types of skepticism based on advertising claims and advertisers' motives; b) indicate how those two types of skepticism affect consumers' responses to green advertising; and c) explore the mediation effects of skepticism.

By analyzing these relationships, this study will show how three types of persuasion knowledge are related to consumer skepticism and which type of persuasion knowledge is the strongest factor in triggering skepticism. In addition, the role of skepticism as a mediator between persuasion knowledge and consumers' responses will be revealed. Based on the results, the study will recommend appropriate brand management and promotion for an eco-friendly

product and suggest which message and creative strategy is most effective when considering consumers' persuasion knowledge and skepticism.

Chapter 2

Literature Review

Persuasion Knowledge

Persuasion knowledge as conceptualized by the persuasion knowledge model is defined as consumers' beliefs in and knowledge of the marketing system (e.g., production and consumption), a company's goals, marketing strategies, and products (Friestad and Wright, 1994). Consumers' knowledge can be formed by personal experience, socialization, and education (Tan & Tan, 2007) and can be one of the factors in consumers' understanding and evaluation of marketing and advertising strategies.

The model proposed that consumers process persuasive attempts by using their knowledge: "Consumers' persuasion coping knowledge enables them to recognize, analyze, interpret, evaluate, and remember persuasion attempts and to select and execute coping tactics believed to be effective and appropriate" (Friestad & Wright, 1994, p. 3). According to this theory, consumers' persuasion knowledge is activated when encountering persuasive communication. By using their persuasion knowledge, consumers can trigger appropriate coping responses and decide whether to accept or resist the persuasive communication (Friestad & Wright, 1994; Koslow, 2000; Taylor & Nelson, 2012). In addition, when consumers have more sophisticated knowledge, they can more easily recognize persuasive attempts and advertisers' motives and then they tend to be more skeptical of persuasive communication (Taylor & Nelson, 2012).

Much scholarly work has also applied the persuasion knowledge model to explain the influence of levels of persuasion knowledge on consumers' information processing and persuasion resistance. The studies suggested that level of persuasion knowledge is influenced by

age, education, and socialization; thus, older, well-educated, and socialized consumers have higher persuasion knowledge than other consumers. Differences exist even among younger consumers. For example, older adolescents have less positive attitudes about advertising than younger adolescents because the older adolescents have more sophisticated knowledge about persuasive communication and can easily recognize exaggerated and misleading messages (Boush, Freistad & Rose, 1994; Taylor & Nelson, 2012).

In addition, consumers' persuasion knowledge is closely related to consumers' skepticism about the trustworthiness of advertising messages and advertisers' motives (Delome, 2009; Mangleburg, 1998). In other words, consumers who have more experience with and knowledge of marketing and advertising are more likely to carefully evaluate the trustworthiness of advertising messages and advertisers' motives, and therefore are more skeptical of persuasive communication. Older consumers are less likely to believe advertising messages, have positive attitudes toward advertising and brands, and to purchase advertised products. In a similar vein, East Germans, who have low knowledge about a free market system and marketing communication, evaluate advertising messages less negatively than West Germans, who have high knowledge in these areas (Feick and Gierl, 1996). Thus, persuasion knowledge not only increases consumers' awareness and understanding of a company's marketing communication but also results in consumers' critical information processing and skepticism.

Another research stream in which persuasion knowledge has been applied is the examination of the effects of new advertising formats, such as advergames, in-game advertising, and product placements (PPL), on consumers' responses. Many new advertising formats have similar characteristics designed to conceal advertisers' persuasive intentions to sell products (Pelsmacker, 2012). Compared with traditional advertising, the formats of new advertising make

it difficult for consumers to distinguish advertising from non-advertising because products are presented as part of a game or TV program. Some studies have focused on whether children can perceive persuasive intentions and process advertising messages in advergimes (or in-game advertising) (An & Stern, 2011; Reijmesdal, 2012): Children cannot identify the agents of advergimes or perceive their primary goal as selling products because they have low persuasion knowledge and cognitive ability to understand advertising.

Types of Persuasion Knowledge

The persuasion knowledge model suggested three types of consumer persuasion knowledge: agent, tactic, and topic (Friestad & Wright, 1995; Tutaj & Reijmersdal, 2012). Depending on the situation, one of the three types of persuasion knowledge will have influence than the others on persuasive message processing (Robert, 2009; Tutaj & Reijmersdal, 2012; Austin et al., 2002).

Agent knowledge

Agent knowledge refers to “all non-persuasion-related knowledge of an agent and it incorporates beliefs about the characteristics and competencies of the agent” (Lorenzon & Russell, 2012, p. 58). Consumers use agent knowledge to determine what a company’s ulterior motive is: to persuade consumers or to make profits (Swaen et al., 2004). Specifically, when comparing various information sources (e.g., advertising, recommendations from sales people, word of mouth (WOM) and consumer reviews), consumers perceive consumer reviews and their friends’ opinions of products as more trustworthy due to the lack of commercial motive (Campbell, 2000; Obermiller & Spangenberg, 2000). In other words, consumers see information from non-commercial sources as not having self-serving motives (e.g., selling products and

making profits), as opposed to information provided by a company with a commercial agenda. Thus, consumers have better attitudes toward WOM and consumer reviews—believing this source will guide them in purchasing the best products—and therefore they are more willing to accept that information as valid.

Moreover, the role of agent knowledge has been verified in advocacy advertising (e.g., corporate social responsibility). When evaluating pro-social messages suggested by a company, consumers may infer an inconsistency between pro-social messages and advertisers' self-serving motives (Artz, 1999; Robert, 1999). This inconsistency makes it difficult for consumers to understand pro-social messages and leads to unintended interpretations of advertisers' motives (Robert, 1999). In other words, consumers may perceive that a company is trying to establish its reputation through advocacy advertising and to manipulate them into purchasing its products. As such, consumers are skeptical of advocacy advertising and tend to negatively evaluate pro-social messages (Artz, 1999; Robert, 1999).

Thus, the first hypothesis is as follows:

Hypothesis 1: Agent knowledge negatively affects skepticism of advertisers' motives and ad claims in green advertising.

Tactic Knowledge

Tactic knowledge is defined as “the consumer's personal knowledge about the strategies and tactics used in persuasion attempts” (Lorenzon & Russell, 2012, p. 58). This type of knowledge is closely related to the consumer's ability to recognize and understand persuasive messages. For these reasons, consumers with high tactic knowledge are less susceptible to persuasive messages and can resist persuasion attempts (Tutaj & Reijmersdal, 2012). In particular, when companies use an explicit advertising format such as online banner ads,

consumers easily recognize commercial messages and can identify its sources (Tutaj & Reijmersdal, 2012). On the other hand, when the distinction between advertising and programming is ambiguous (e.g., advergames, keyword search ads, and product placement), it is difficult for consumers without tactic knowledge to perceive these formats as marketing communication. In a similar vein, consumers with low tactic knowledge are unaware of in-game advertising and its persuasive intention, and have positive responses to playing the games (Cowley, 2008; Lorenzon, 2012).

In addition, tactic knowledge can explain not only advertising formats but also advertising appeal. Consumers can use tactic knowledge to help them decide whether a certain type of advertising appeal is appropriate and whether the marketing communication is morally or normatively acceptable (Wei, 2008). Specifically, although appealing to fear and guilt is an effective way of changing consumers' behaviors, there is an ethical issue in that the change in behavior is accomplished by the manipulation of negative emotions (Benet, 1993). In particular, when consumers perceive that an appeal to their sense of guilt takes advantage of their desire to avoid negative emotions, they are more likely to be skeptical of the advertisers' motives and respond negatively (Hibber, 2007).

Thus, the second hypothesis is as follows:

Hypothesis 2: Tactic knowledge negatively affects skepticism of advertisers' motives and ad claims in green advertising.

Topic Knowledge

Topic knowledge is "all non-persuasion-related knowledge about the topic or content of the persuasion attempt and this includes information about the products advertised and context in which they appear" (Lorenzon & Russell, 2012, p.58). In the case of corporate social

responsibility, if consumers understand how corporation's socially responsible activities contribute to public welfare, they will positively evaluate the activities and become willing to purchase products (Manuel et al., 2012). Specifically, consumers who are interested in environmental issues and have knowledge about the issues prefer eco-friendly products, tend to have positive attitudes toward green advertising, and are willing to purchase green products (Phillips, 1999; Kim & Choi, 2005; Barber, 2012). Hence, the consumers' interests in an advertising topic can mitigate any skepticism toward green advertising.

Thus, the third hypothesis is as follows:

Hypothesis 3: Topic knowledge positively affects skepticism of advertisers' motives and ad claims in green advertising.

As discussed above, consumers' persuasion knowledge (i.e., agent, tactic, and topic) affects their skepticism toward green advertising. Previous studies have focused on the effects of level of persuasion knowledge on skepticism and persuasion resistance. There are a few studies which examine how each type of knowledge affects skepticism. The studies have suggested that agent and tactic knowledge are closely related to skepticism (Swaen et al., 2004; Tutaj & Reijmersdal, 2012). However, it is important to know how each type of knowledge is related to the two types of skepticism and which type of knowledge has the most powerful influence on that skepticism.

Thus, the first research question is as follows:

RQ1: What kind of consumer persuasion knowledge has the most powerful influence on skepticism?

Skepticism

Skepticism toward general advertising is a multidimensional concept defined as the “tendency toward disbelief in advertising claims and mistrust in advertisers’ motives” (Boush, Freistad & Rose, 1994). This concept is based on consumers’ beliefs about the marketplace and non-personal communication (Obermiller & Spangenberg, 1998). If consumers perceive the purpose of advertising is to sell products, they are more likely to believe that advertising is exaggerated and misleading. This skepticism leads to consumers’ negative responses to advertising and then results in resisting persuasive communication. In particular, highly skeptical consumers tend to avoid giving attention to advertising claims (Obermiller, Spangenberg & MacLachlan, 2005). Moreover, consumers with high skepticism have less belief in advertising claims as information, like advertisements less, and purchase fewer products than consumers with low skepticism (Obermiller & Spangenberg, 1998; Chen & Leu, 2011).

Previous scholarly work that has focused on the effects of skepticism has shown two streams of research: disbelief in advertising claims and mistrust in advertisers’ motives. The first research stream has focused on the effects of message types (e.g., subjective vs. objective; search vs. experience vs. credence) on skepticism. Specifically, subjective advertising claims lead to higher skepticism than objective advertising claims (Feick & Gierl, 1996), and consumers are the most skeptical of credence advertising claims (e.g., “The electronic amplifier circuitry delivers up to four times the amplifier’s rated power”) and the least skeptical of search advertising claims (e.g., “This truck is available with v-8 or v-6 engines”) (Ford & Smith, 1990; Feick & Gierl, 1996). In addition, various studies suggest that skepticism toward advertising claims is related to other factors; for example, brand familiarity (Hardesty, Carlson & Bearden, 2002), source

credibility (Moore & Rodger, 2005), and information types (Ford & Smith, 1990; Obermiller & Spangenberg, 2000).

The second research stream investigates whether advertisers' intentions are related to consumers' skepticism and their responses. Studies have suggested that advertisers' self-serving motives (e.g., to increase sales and enhance company reputation) often lead to increased consumer skepticism and fewer positive responses than their altruistic motives (e.g., concern about social issues). Manuel et al. (2012) indicated that when consumers perceive cause-related marketing communication as having self-serving motives, they tend to distrust the companies and have negative attitudes toward the advertising.

Skepticism toward Green Advertising

Skepticism can be influenced by the characteristics of a particular product's category—even if the skepticism is a stable concept based on consumers' beliefs (Diehl, Meuller & Terlutter, 2007). Prior studies have suggested that product involvement and the characteristics of a product are closely related to skepticism toward advertising. Mueller (2006) indicated that high involvement can mitigate skepticism toward advertising, and that consumers are more likely to believe advertising claims about high involvement products, such as those related to health. In addition, Diehl, Meuller and Terlutter (2007) suggested that consumers are less skeptical of pharmaceutical advertising than general advertising because of governmental regulations on pharmaceutical advertising.

In a similar vein, skepticism toward green advertising is strongly associated with the characteristics of green products and green advertising claims. Most consumers believe that the reason companies produce pro-environmental products is to increase their profit rather than to

increase environment protection (Albayrak et al., 2011). In addition, green advertising is considered marketing communication: a way to enhance companies' pro-environmental images. Thus, the consumers' beliefs in green products and green advertising is closely related to companies' self-serving motives and most green advertising claims tend to support the consumers' beliefs.

In green advertising, most claims can be divided into two types: vague vs. scientific (Mayer & Scammon, 1993). Specifically, some green advertising claims lack detail and specific information (e.g., environmentally friendly products) while other claims include technical and specialized terminology (e.g., photodegradable). The interesting point is that consumers have difficulty understanding both messages and do not know whether green products are as environmentally friendly as shown in green advertising claims (Mayer & Scammon, 1993; Chang, 2011). When green advertising claims are vague, consumers believe that the messages are exaggerated or misleading (Albayrak et al., 2011). Moreover, when the claims use scientific terminology to inform consumers of the benefits of green products, the consumers do not understand the terminology due to lack of scientific knowledge (Newell, Goldsmith & Banzhaf, 1998).

Hence, some consumers do not believe the environmental benefits suggested by green advertising and have an inclination to distrust green advertising (Mohr, Dogan & Pam Scholder, 1998). This skepticism toward green advertising negatively affects advertising credibility, advertising attitudes, brand attitudes, and purchasing intention (Newell et al., 1998; Albayrak et al., 2011).

Thus, the fourth hypothesis is as follows:

Hypothesis 4-1: Skepticism of advertisers' motives and advertising claims are negatively related to green advertising's credibility.

Hypothesis 4-2: Skepticism of advertisers' motives and advertising claims are negatively related to green advertising's attitudes.

Finally, studies have suggested that consumers' prior experience and knowledge influences their skepticism which leads consumers to defend against and resist persuasive communication. However, there is little research to explain the mediation effect of skepticism toward green advertising between persuasion knowledge and consumers' responses. In order to clearly explain the relationship between consumers' knowledge, skepticism, and responses, it is necessary to explore whether the two types of skepticism work as mediators.

Thus, the research question is as follows:

RQ 2: Do the two types of skepticism have a mediation effect between persuasion knowledge and consumers' responses?

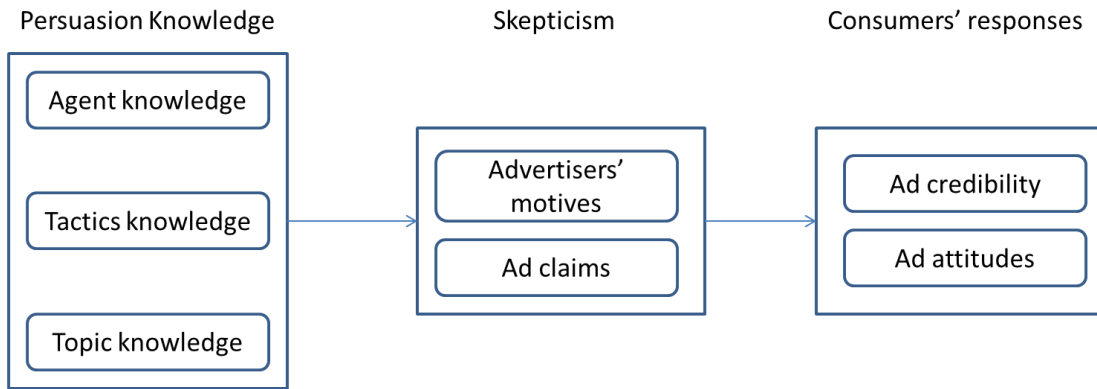


Figure1. Research Framework

Chapter 3

Method

Survey Procedure

The purpose of the study is to examine the effects of persuasion knowledge and skepticism on consumers' responses to green advertising (e.g., advertising credibility and attitudes) and to explore the mediation effect of skepticism. A survey was conducted among university students for understanding the relationships between persuasion knowledge, skepticism, and consumers' responses.

A total of 225 students were recruited from introductory-level classes, such as Advertising Principles, from colleges of communication and information in university. The students were informed of the purpose of this study and survey procedure via a recruitment statement; they were also assured that the survey was conducted anonymously and had no risk. Next, self-report questionnaires were distributed among the participants and each participant spent about 10-15 minutes to complete the questionnaire. The questionnaire was divided into four parts: a) personality (e.g., cynicism and environmental activism); b) persuasion knowledge that consumers have (i.e., agent, tactic, and topic); c) skepticism (i.e., how consumers perceive advertisers' motives and trustworthiness of ad claims in green advertising); and d) demographics (see Appendix A).

Subjects

Eight questionnaires were deemed invalid and eliminated from the final analysis. The responses of 217 participants were analyzed. Of the total respondents, 134 (61.8%) were women and 83 (38.2%) were men. The age of the respondents ranged from 18 to 34 years and the

average age was 20.31 years. Majority of the respondents were American-White (177, 81.65%) followed by African-Americans (19, 8.8%), Asian (6, 2.8%), and Hispanic (4, 1.8%).

Measurement

Independent Variables

Many studies have applied the persuasion knowledge model (Friestad & Wright, 1995) to explain the theoretical framework and to verify the effects of persuasion knowledge on consumers' information processing (Boush et al., 1994; Feick & Gierl, 1996; Manleburg & Bristol, 1998; An & Stern, 2011). Although scholars have attempted to measure different types of persuasion knowledge, scales for three types of persuasion knowledge (agent, tactic, and topic) have not been developed. In this study, the researcher has attempted to identify the most appropriate scales to measure these three types of persuasion knowledge on the basis of past literature (Haytko & Matulich, 2008; Wei, Fischer & Main, 2008; Robert, 2009; Hove, Paek, & Isaacson, 2011; Reijmersdal, Rozendal, & Buijzen, 2012). To this end, operational definitions were formulated and a total of six scales were chosen (2 scales for each type of persuasion knowledge).

The selected scales were reviewed by another researcher who was well versed with the persuasion knowledge model and the definitions of the three types of persuasion knowledge. Five graduate students also examined whether the scales were easy to understand and whether they measured the three different types of persuasion knowledge. Although efforts were made to refine the validity and reliability of the scales, the Cronbach's alpha values were relatively low (Cronbach's $\alpha = .616$ for agent knowledge, Cronbach's $\alpha = .592$ for tactic knowledge, and Cronbach's $\alpha = .402$ for topic knowledge).

Table 1.
Operational Definition of Persuasion Knowledge

Agent knowledge	- Beliefs about the traits, competence, and goals of persuasion agent - Defined as knowledge about companies and advertising sponsors. - Defined as knowledge about market system such as production and consumption
Tactic knowledge	- Beliefs about communication tactics, for example, message, content, and image - Defined as knowledge about various marketing communication such as advertising, public relations, and sponsorship.
Topic knowledge	- Beliefs about the topic of the message - Defined as knowledge about green products and green advertising.

Mediator

To measure two types of skepticism (i.e., advertisers' motives and advertising claims), we used five scales, as suggested by Mohr, Eroglu and Ellen (1998) who studied consumers' skepticism toward green marketing communication and sponsors (Cronbach's $\alpha = .371$ for advertiser's motive and Cronbach's $\alpha = .811$ for advertising claims).

Dependent Variables

Consumers' responses to green advertising as measured by advertising credibility and attitudes have been widely reported in advertising and marketing literature. The credibility and attitudes scales for this study were taken from Mackenzie, Lutz and Belch (1986). The credibility had three ratings—convincing, believable, and unbiased—while the attitudes scale had “good, pleasant, and favorable.” The third item in the credibility scale (i.e., unbiased) was removed from

the final analysis because of its Cronbach's alpha value (Cronbach's $\alpha = .734$ for credibility and Cronbach's $\alpha = .881$ for attitude).

Control Variables

To determine the relationship between relevant variables, other factors such as individual differences that may affect the relationship should be controlled. For instance, environmental activism (or environmentalism) is one of the key factors that affects pro-environmental behaviors and can be closely linked to credibility and attitudes toward green advertising. In addition, consumers' personality traits such as cynicism (i.e., enduring beliefs that others' behaviors are based on selfish motives) also influence their skepticism toward marketing communication. Consumers who are cynical are more likely to have doubts about advertising (Mohr, Eroglu, & Ellen, 1998). Thus, this study measured environmental activism and cynicism as control variables (See Appendix A) and excluded their influences on the relationship between relevant variables in the final data analysis. The scale for environmental activism was adapted from Haytko and Matulich (2008) (Cronbach's $\alpha = .867$) while cynicism was taken from Kanter and Mirvis (1989) (Cronbach's $\alpha = .768$).

Table 2.
Measurement Scales of Main Variables

	Variables	Scales
Persuasion knowledge	Agent knowledge	<ul style="list-style-type: none"> - Advertisers have insincere intentions. - Most businesses are more interested in making profits than in serving consumers and society.
	Tactics knowledge	<ul style="list-style-type: none"> - Advertising results in higher prices for products. - Advertising persuades people to buy products they do not really need.
	Topic knowledge	<ul style="list-style-type: none"> - Phrases on packages or in advertising such as “Eco-safe, environmentally safe, and earth smart etc” represent environmental attributes of products without further explanation. - Most environmental claims and symbols on packaging and in advertising are regulated by government.
Skepticism	Advertisers’ motive	<ul style="list-style-type: none"> - Most businesses shirk their responsibility toward their consumers. - Most green marketing is deceptive and used to create the perception that the company’s policies are environmentally friendly.
	Advertising claims	<ul style="list-style-type: none"> - Because environmental claims are exaggerated, consumers would be better off if such claims in advertising were eliminated. - Most environmental claims in advertising are intended to mislead rather than to inform consumers. - Environmental claims in advertising lead people to believe things that aren’t true.

Table 2 Continued.
Measurement Scales of Main Variables

Variables	Scales
Advertising credibility	<ul style="list-style-type: none">- Green advertising is believable.- Green advertising is convincing.
Advertising attitude	<ul style="list-style-type: none">- Green advertising is good.- Green advertising is pleasant.- Green advertising is favorable.

Chapter 4

Results

To test the hypothesized relationship between persuasion knowledge, skepticism, and consumers' responses, a series of multiple regressions was conducted. Multiple regression is used to examine how multiple independent variables influence the outcome variables (Moore, 2007; Ott & Longnecker, 2010). In addition, cynicism and environmental activism which may be associated with skepticism and consumers' responses to green advertising were controlled to avoid covariance. Lastly, a four-step mediation analysis, suggested Baron and Kenny (1986), was performed to investigate the role of skepticism as a mediator of the relationship between persuasion knowledge and consumers' responses.

The Relationship between Persuasion Knowledge and Skepticism

Hypotheses 1, 2, and 3 predicted that three types of persuasion knowledge (i.e., agent, tactic, and topic) affect the two types of skepticism linked to advertisers' motives and advertising claims. As shown Table 3, agent knowledge is positively related to two types of skepticism: advertisers' motives ($\beta = .259, p < .001$) and advertising claims ($\beta = .226, p < .05$). Moreover, the relationship between agent knowledge and skepticism is statistically significant and thus hypothesis 1 is supported. The positive relationship suggests that as agent knowledge increases, consumers are more likely to be skeptical of companies' intentions to engage in green advertising and to disbelieve the pro-environmental messages in advertising.

In the case of tactic knowledge, the hypothesis is partially supported. Tactic knowledge shares the statistically significant relationship with skepticism toward advertisers' motives ($\beta = .196, p < .05$) but not with skepticism toward advertising claims. The results imply that

consumers with high level of tactic knowledge tend to perceive companies' intentions as self-serving but may not doubt the eco-friendly messages in advertising. Lastly, the relationship between topic knowledge and skepticism is not statistically significant. Thus, in the case of consumers with high levels of environmental knowledge, the knowledge is not associated with the skepticism toward advertisers' motives or ad claims.

The results suggest that agent knowledge is the strongest predictor of both types of skepticism and tactic knowledge also affects the skepticism. In other words, consumers who are well versed with advertising and marketing communication perceive advertisers' motives of conducting green advertising and pro-environmental messages as insincere. Thus, it may be inferred that agent knowledge and tactic knowledge influence skepticism more significantly than topic knowledge.

Table 3
Summary of Multiple Regression Analysis for Skepticism

Variable		B	SE(B)	β	R ²
Advertiser's Motive ^a	Agent Knowledge	.201	.054	.259***	.176
	Tactic Knowledge	.155	.057	.196**	
	Topic Knowledge	-.069	.067	-.066	
Ad Claims ^b	Agent Knowledge	.212	.066	.226**	.078
	Tactic Knowledge	.119	.069	.124	
	Topic Knowledge	-.047	.082	-.037	

a: $F(5, 207) = 10.793^{***}$, b: $F(5, 206) = 10.058^{***}$, $*** p < .001$, $** p < .05$

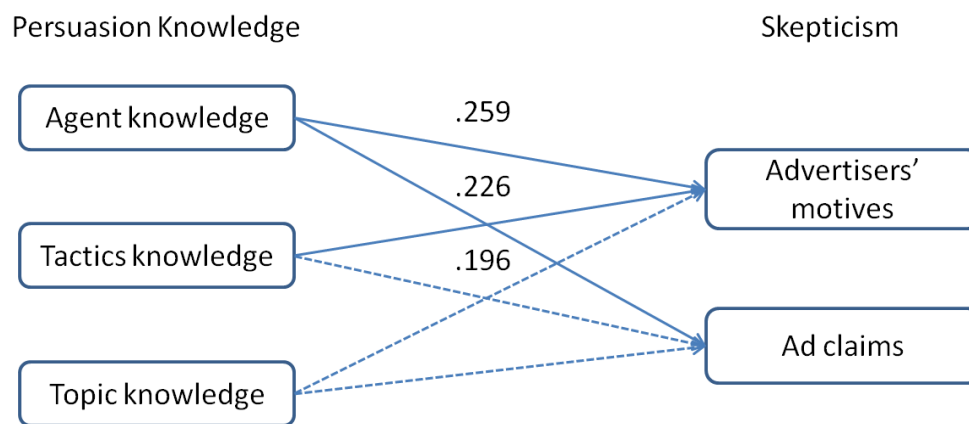


Figure 2. *Results of Multiple Regression Analysis for Skepticism*

The Relationship between Skepticism and Consumer Response

Hypothesis 4 examined the influences of skepticism on the credibility of and attitudes toward green advertising. As illustrated in Table 4, two types of skepticism—toward advertisers' motives ($\beta = .143, p < .05$) and advertising claims ($\beta = -.354, p < .001$)—are significantly related

to green advertising credibility. Consumers who are skeptical of advertisers' motives and claims in green advertising may find such pro-environmental marketing communication less believable. However, with regard to attitudes toward green advertising, the skepticism toward advertising claims is the only predictor of the negative perception of green advertising ($\beta = -.299, p < .001$). Skepticism toward advertisers' motives cannot predict consumers' attitude toward green advertising.

The results suggest that skepticism toward advertising claims is the most influential determinant of consumers' responses, such as credibility and attitudes. This may imply that consumers with a high level of doubt about pro-environmental messages negatively evaluate green advertising and green marketing communication.

Table 4
Summary of Multiple Regression Analysis for Consumers' Responses

Variable	B	SE(B)	β	R ²	
Credibility ^a	Advertisers' Motives	.164	.077	.143**	.094
	AD Claims	-.333	.064	-.354***	
Attitude ^b	Advertisers' Motives	.091	.077	.077	.068
	AD Claims	-.290	.0664	-.299***	

a: $F(4, 209) = 16.825^{***}$, b: $F(4, 209) = 22.841^{***}$, *** $p < .001$, ** $p < .05$

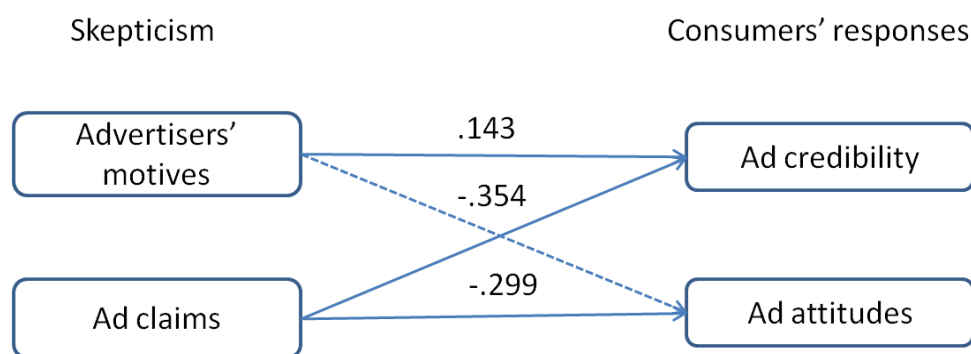


Figure 3. *Results of Multiple Regression Analysis for Consumers' Responses*

Mediation Effect of Skepticism

The four-step method developed by Baron and Kenny (1986) was used to examine whether skepticism mediates the relationship between persuasion knowledge and consumers' responses. They identified the following conditions to confirm mediation between predictors and outcomes: a) predictors are significantly related to outcomes; b) predictors are significantly related to the proposed mediator; c) the mediator is significantly related to the outcomes when

the predictors are controlled; and d) the strength of the relationship between predictors and the outcomes significantly decreases when the mediator is controlled.

The first mediation test examines whether skepticism about advertisers' motives mediates the relationship between persuasion knowledge and green advertising credibility. Although agent knowledge ($B=.201$, $SE=.054$, $p<.001$) and tactic knowledge ($B=.155$, $SE=.057$, $p<.05$) are significantly related to skepticism, the effects of topic knowledge on the skepticism are not statistically significant. Moreover, none of the three types of persuasion knowledge and skepticism are significantly related to credibility. As the first and third conditions are not met, it is clear that skepticism about advertisers' motives do not have any mediating effects. Likewise, the mediation effect of skepticism toward advertising claims on credibility is not supported because the three types of persuasion knowledge are not significantly related to credibility, even though the second and third criteria are satisfied.

Finally, a test examined whether skepticism toward advertising claims mediated the relationship between persuasion knowledge and attitudes. The results are similar to those of the previous mediation test. Although agent knowledge is significantly related to the skepticism, and the skepticism is also significantly related to attitude, the three types of persuasion knowledge do not share a significant relationship with attitudes. Thus, the first condition is not satisfied, and the mediation effect of skepticism toward advertising claims on attitude is not supported. These results confirm that neither type of skepticism can play a mediating role in the relationship between persuasion knowledge and consumers' responses (e.g., credibility and attitude).

Chapter 5

Discussion

The purpose of the study was to examine the relationship between consumers' persuasion knowledge, skepticism toward green advertising, and responses to green advertising. To investigate this, the study explored three types of persuasion knowledge (i.e., agent, tactic, and topic), two types of skepticism (i.e., toward advertisers' motives and toward advertising claims), and advertising credibility and attitudes. The results showed that a) agent and tactic knowledge are significantly related to skepticism toward green advertising; b) both types of skepticism negatively affect advertising credibility and attitudes; and c) skepticism does not mediate the relationship between persuasion knowledge and consumers' responses. The theoretical and practical implications of these results are addressed below.

Theoretical Implications

The result of this study has a couple of theoretical implications. First, the study revealed the effects of different types of persuasion knowledge on skepticism. A number of scholarly works have reported that persuasion knowledge affects consumers' skepticism toward persuasive communication, which leads them to resist the communication (Boush, Freistad & Rose, 1994; Feick & Gierl, 1996; Manleburg, & Bristol, 1998; Taylor & Nelson, 2012). However, these studies mostly focused on the level of persuasion knowledge rather than the type of persuasion knowledge. Only a few studies suggested that one type of persuasion knowledge rather than another might have a greater influence on consumers' information processing, depending on the conditions (e.g., Advergaming and PPL) (An & Stern, 2011; Lorenzon & Russell, 2012; Tutaj & Reijmersdal, 2012). The current study examined that the type of persuasion knowledge was

related to consumers' skepticism and then it also suggested ways in which the specific type of persuasion knowledge was an important variable affecting the skepticism.

In addition, this study identified the type of persuasion knowledge that is the strongest determinant of skepticism. Specifically, the results show that agent and tactic knowledge are significantly related to skepticism of advertisers' motives, while only agent knowledge is related to skepticism toward advertising claims. Agent knowledge has the greatest influence on skepticism toward green advertising and is followed by tactic knowledge. These results are in line with those of the previous studies. Consumers who are well versed with the marketplace and are familiar with companies' self-serving motives are more likely to recognize commercial messages and resist them (Manuel et al., 2012). On the other hand, when exposed to unfamiliar advertising formats (e.g., advergames), consumers find it difficult to recognize the unfamiliar format as an advertisement and therefore are more receptive to the advertising messages and the advertisers' motives (An & Stern, 2011; Lorenzon & Russell, 2012; Tutaj & Reijmersdal, 2012). Thus, agent and tactic knowledge can make consumers more skeptical, which leads them to resist persuasive communication.

Topic knowledge did not have the significant relationship with either type of skepticism. Although consumers may be knowledgeable about environment protection and green products, they do not tend to be skeptical of green marketing communication. Moreover, literature on environmental knowledge suggests that environmental knowledge leads to consumers' pro-environmental behaviors; for example, participating in recycling, conserving energy, and purchasing green products (Kim & Choi, 2011).

The results indicate that the three types of persuasion knowledge have different impacts on skepticism; moreover, the impacts vary depending on the types of skepticism (i.e., advertisers'

motives and advertising claims). Unlike many of the previous studies, which focused solely on the effect of the level of persuasion knowledge have on skepticism, this study also sheds light on the roles of agent, tactic, and topic knowledge in forming consumers' skepticism and persuasion resistance.

Another theoretical implication of this study is that it highlights the negative relationship between skepticism and consumers' responses. Specifically, as reported in prior studies, skepticism about advertising claims has a stronger negative effect on consumers' attitudes and assessment of advertising credibility. Because the skepticism is based on a consumer's perception that an advertisement's messages are exaggerated and misleading, consumers are likely to negatively evaluate the advertising claims (Obermiller & Spangenberg, 1998). Thus, consumers who are skeptical of advertising are less likely to believe in advertising's messages, prefer advertised brands, or buy advertised brands (Newell et al., 1998; Albayrak et al., 2011; Chen & Leu, 2011).

Practical Implications

The study contains several practical implications for the advertising and marketing industry. First, when launching new pro-environmental products, a company should engage in specialized brand management and execute a marketing strategy that focuses on brand promotion of the pro-environmental products. In particular, practitioners should create a new brand for pro-environmental products rather than using an existing popular brand or company name. In addition, companies should adopt a relatively unfamiliar format of communication, such as advergames or the use of social media, with which to promote the brand. Lack of knowledge about a new brand and its advertising format will make it difficult for consumers to use their

prior knowledge to evaluate the brand and its persuasive messages. In other words, by using brand management and promotion strategy, companies can minimize the influences of consumers' persuasion knowledge (e.g., agent and tactic) on consumers' skepticism in the process of decision making.

In addition, companies should initiate marketing strategies that increase consumers' topic knowledge in order to establish brand loyalty for pro-environment products. Companies need to give clear, detailed information about what the competitive advantages of the brand are and why the competitive advantages play an important role in protecting the environment. Specifically, a company can use advertising to present evidence that substantiates the strength of its brand by using a certified third-party seal such as "USDA Certified Organic" or "Certified Energy Efficient." Another way to enhance consumers' knowledge about a brand is to provide consumers various opportunities to experience their products, such as by distributing samples at events. This would help companies teach customers about a brand's benefits and help them form pro-environmental images of the brand. Moreover, by using the brand, consumers could satisfy their desire to protect the environment and identify themselves as pro-environmental. Thus, the marketing strategy would contribute to establishing brand loyalty.

In addition, advertising strategies offering detailed information and substantiation for pro-environmental products can also reduce consumer skepticism in advertising. Studies show that oversimplified messages or messages using specific jargon to green advertising can actually increase consumers' ambiguity (Mayer & Scammon, 1993; Newell et al., 1998; Chang, 2011). It leads to difficulty in understanding the messages and then to increased consumer skepticism. If a company presents understandable messages in green advertising to its consumers, their

skepticism about green marketing communications will be reduced and they will be more likely to believe the advertising messages and positively evaluate green marketing communication.

Limitations and Future Research Suggestions

This study also has a number of limitations. The first limitation pertains to measurement issues. As the scales for measuring the three types of persuasion knowledge (i.e., agent, tactic, and topic) have not yet been developed, the study selected the most appropriate scales to measure the concepts on the basis of prior literature (Haytko & Matulich, 2008; Wei et al., 2008; Robert, 2009; Hove et al., 2011; Reijmersdal et al., 2012). To determine whether the selected scales would effectively measure persuasion knowledge, an expert in persuasion knowledge examined the scales for suitability.

Despite these procedures, the selected scales had difficulties in measuring the concepts defined by the study, and the internal consistency of the scales was relatively low. In particular, evaluative statements (e.g., advertisers have insincere intentions) were used to measure agent and tactic knowledge. Those types of statements are not appropriate scales with which to measure consumers' objective knowledge, due to the fact that evaluative statements can be influenced—not by the subjects' knowledge, but by their thoughts and beliefs. In other words, by using evaluative statements, it is impossible to determine whether consumers know a fact for certain and/or whether they can distinguish true statements from false statements.

Although this study illuminates the meaningful relationship between the different types of persuasion knowledge and skepticism, future research should strive to address the measurement limitations. Efforts should be made to develop scales that accurately measure the three types of persuasion knowledge. Specifically, the scales should consist of true/false

statements about agent, tactic, and topic because this method is more widely used than evaluative statements when measuring a consumer's objective knowledge. In addition, researchers need to re-examine how agent, tactic, and topic knowledge are associated with skepticism by using these scales. This will ensure rigorous measurement reliability and the association between the concepts can be fine-tuned with confidence.

Secondly, researchers should address the balance of persuasion knowledge (i.e., negative or positive knowledge). The scales for measuring agent and tactic knowledge had negative biased statements, while the scales for topic knowledge had neutral statements. To understand the relationship between the different types of persuasion knowledge and consumer skepticism, one needs to investigate whether the results are influenced by the balance of persuasion knowledge. Thus, future research should explore how positive biased or negative biased persuasion knowledge influences consumers' skepticism and verify that relationship with the different types of persuasion knowledge.

Lastly, although this study shows how the three types of persuasion knowledge affect consumers' skepticism, other factors, such as level of persuasion knowledge, should be explored in order to understand their role in consumer behavior. As this study's sample consisted of highly knowledgeable participants, it is important to verify whether the relationship varies when sampling people with low levels of persuasion knowledge. Thus, future research should examine the interaction effects between types and levels of persuasion knowledge and show how the effects of the different types of persuasion knowledge on consumers' skepticism vary depending on knowledge levels. In doing so, future research will be able to offer better explanations and interpretations of the effects of persuasion knowledge on consumers' information processing.

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Appendix:

Appendix A.

Survey Questionnaires.

Thank you for your participation. This study is designed to explore college students' thoughts/feelings about eco-friendly advertising.

There are no anticipated risks for study participants. Your participation is voluntary. The information you provide will be confidential. You will not be identified individually at any stage of the study.

If you do not wish to answer a question, you may skip the question. Also, if you wish to quit the survey, you can simply discontinue or refuse to take part at any time. In this case, your responses will not be processed unless you submit the survey upon completion.

If you have questions about the study or the procedures, you may contact the investigator, Jinhee Lee, by phone at (865) 312-2502, or by e-mail at jlee130@utk.edu. If you have questions about your rights as a participant, contact Brenda Lawson in the Office of Research at (865) 974-7697 or at blawson@utk.edu.

You must be age 18 or older to participate. If you are age 18 or older, please check here.

By checking the box and completing the survey, you provide your informed consent to participate.

For this survey, the definition of “Green advertising” is as follows:

“Green advertising” promotes of products or services which have the ability to enhance the environment or use environmental claims, symbols, emblems, logos, and/or depictions.

**For each of the following statements about personality, please indicate your level of agreement:
Strongly Disagree (1); Neither Agree nor Disagree (4); Strongly Agree (7).**

	Strongly Disagree		Neither			Strongly Agree	
Most people will tell a lie if they can benefit from it.	1	2	3	4	5	6	7
People pretend to care more about one another than they really do.	1	2	3	4	5	6	7
It’s pathetic to see an unselfish person in today’s world because so many people take advantage of him or her.	1	2	3	4	5	6	7
Most people are just out for themselves.	1	2	3	4	5	6	7
Most people inwardly dislike putting themselves out to help other people.	1	2	3	4	5	6	7
Most people are not really honest by nature.	1	2	3	4	5	6	7

For each of the following statements about perception about behaviors that affect the environment, please indicate your level of agreement: Strongly Disagree (1); Neither Agree nor Disagree (4); Strongly Agree (7).

	Strongly Disagree		Neither			Strongly Agree	
I'd be willing to ride a bicycle or use public transportation to go to work/school to reduce air pollution.	1	2	3	4	5	6	7
I often urge my friends to use products that are advertised as being green.	1	2	3	4	5	6	7
I would be willing to donate a day's worth of pay to a foundation to help it improve the environment.	1	2	3	4	5	6	7
I make every attempt to join environmental cleanup drives.	1	2	3	4	5	6	7
I would be willing to join a group or club that is concerned solely with ecological issues.	1	2	3	4	5	6	7
I strive to learn as much as possible about environmental issues.	1	2	3	4	5	6	7

For each of the following statements regarding your general knowledge of products, advertising , and ‘green’ advertising, please indicate your level of agreement: Strongly Disagree (1); Neither Agree nor Disagree (4); Strongly Agree (7).

	Strongly Disagree		Neither			Strongly Agree	
Advertisers have insincere intentions.	1	2	3	4	5	6	7
Most businesses are more interested in making profits than in serving consumers and society.	1	2	3	4	5	6	7
Advertising results in higher prices for products.	1	2	3	4	5	6	7
Advertising persuades people to buy products they do not really need.	1	2	3	4	5	6	7
Phrases on packages or in advertising such as “Eco-safe, Environmentally safe, and Earth smart etc” represent environmental attributes of products without further explanation.	1	2	3	4	5	6	7
Most environmental claims and symbols on packaging and in advertising are regulated by government.	1	2	3	4	5	6	7

For each of the following statements, indicate your perception about advertisers and green advertising. , please indicate your level of agreement: Strongly Disagree (1); Neither Agree nor Disagree (4); Strongly Agree (7).

	Strongly Disagree		Neither			Strongly Agree	
Most businesses shirk their responsibility toward their consumers.	1	2	3	4	5	6	7
Most green marketing is deceptive and used to create the perception that the company's policies are environmentally friendly.	1	2	3	4	5	6	7
Because environmental claims are exaggerated, consumers would be better off if such claims in advertising were eliminated.	1	2	3	4	5	6	7
Most environmental claims in advertising are intended to mislead rather than to inform consumers.	1	2	3	4	5	6	7
Environmental claims in advertising lead people to believe things that aren't true.	1	2	3	4	5	6	7

For each of the following statements regarding the credibility of green advertising and advertisers, please indicate your level of agreement: Strongly Disagree (1); Neither Agree nor Disagree (4); Strongly Agree (7).

	Strongly Disagree		Neither			Strongly Agree	
Green advertising is believable.	1	2	3	4	5	6	7
Green advertising is convincing.	1	2	3	4	5	6	7
Green advertising is unbiased.	1	2	3	4	5	6	7
Green advertising is good.	1	2	3	4	5	6	7
Green advertising is pleasant.	1	2	3	4	5	6	7
Green advertising is favorable.	1	2	3	4	5	6	7

Demographic Information

Q1) Please, check your sex. Female _____ Male _____

Q2) What is your age? _____ years old

Q3) What is your ethnicity?

American (White) _____ Hispanic _____ Black / African-American _____

Asian _____ American Indian _____

Other _____ Prefer not to answer _____

Vita

Jinhee Lee, originally from South Korea, was born in 1982. She received her Bachelor of Science in environmental science and Bachelor of Arts in global management and marketing from Kyung Hee University in 2005. She attended Chung-Ang University to study advertising and received her master's in advertising and public relations in 2010. After graduation, she worked for an organization that promoted online advertising self-regulation for a year and a half. In 2011, she was accepted into the College of Communication and Information at the University of Tennessee, Knoxville. She was recently accepted into the University of Tennessee's doctoral program, and was awarded a teaching assistantship under the guidance of Dr. Eric Haley. Her research interests include consumer information processing and persuasion resistance within the context of advocacy advertising and advertising to children. She has plans to continue her education and research in Knoxville for several years to come.