ANALYZING THE EFFECTIVENESS OF PUBLIC POLICY MESSAGES ON ATTITUDES AND BEHAVIORAL CHANGES

By

Yun, Bichwi

THESIS

Submitted to

KDI School of Public Policy and Management

in partial fulfillment of the requirements

for the degree of

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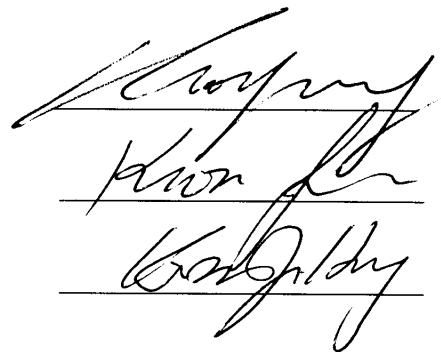in partial fulfillment of the requirements

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Committee in charge:

Professor Yoon Cheong CHO, Supervisor

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ABSTRACT

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This study measures effects of public policy related messages on conditional principles by applying the modified extended Fishbein model (1980). With the consideration of the modified extended Fishbein model, this study measured the relationships i) how estimates of attitudes affect differential attitude; ii) how estimates of subjective norm affect differential subjective norm; iii) how differential attitude and subjective norm affect differential intention; and iv) how differential intention affects behavioral change. In particular, this study measures effects of conditional principles including effects of i) print ads and ii) TV ads. For the effects of TV ads, this study measured by formats that deliver the messages i) directly and ii) indirectly (e.g., Product Placement). In order to prove the hypotheses, this study applied statistical analyses such as factor analysis, Analysis of Co-Variance (ANCOVA), Analysis of Variance (ANOVA), and regression analyses. The results of the study found that proposed effects are all statistically significant. This study provides both theoretical and managerial implications to the public policy.

Key word: Attitudes, Subjective Norm, Fishbein Model, Public Policy Messages

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I. INTRODUCTION

Public policy messages, as part of the Integrated Marketing Communications (IMC) have been applied with diverse aspects for both non-profit and profit organizations. Public policy messages have been developed based on government regulations with considerations of the effects to the attitudinal and social behavioral changes. On a basis of the consideration, the purpose of this study is to investigate how people perceive the public policy messages and how their perception affects their attitudes and behavior. In order to measure attitudinal and behavioral changes affected by public policy messages, this study modified a well-known theoretical model, entitled "Extended Fishbein Model" and applied the modified model,

1.1 Objective of the Study

Prior researches addressed the importance of the consumer by addressing "consumer-centric management" for both non-profit and profit organizations (Levitt, 1960; Wei-Skellern and others, 2007; Gundlach and Wilkie 2009; Smith, Drumwright, and Gentile, 2010; Andreasen 2012). The communication messages that deliver consumer-oriented messages have been applied with various integrated tools, such as advertising and promotion. Among the integrated communication tools, in particular, public policy messages have been utilized to deliver messages of non-profit organization that are related to the government regulations.

Based on the consideration, this study investigates how the advertising and promotional messages persuade customers to change attitudes and behavior to make the right decision that is also related to social norms. Public policy messages, which focus on the better social behavior and decision such as warning messages (e.g., anti-smoking), have been also generated with the aspects of the consideration of consumer and people in general. How customers make decision in a positive way has been considered by various researchers with the focus on the consumer-oriented management (Petty, Cacioppo and Schumann, 1983;

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Bitner and Obermiller, 1985; Gardner, 1985; Park and Young, 1986; Higie, Feick, and Price, 1991; Solomon, 2009).

This study, in particular, investigates how customer-oriented public policy messages affect the attitudes and behavior. By extending the theoretical and practical applications in the private sector, this study posits that aims of consumer-oriented management related to the public policy messages have been developed also with the consideration of public sector.

1.2 Development of Research Questions

To explore this study, both qualitative and quantitative researches have been conducted. This study has conducted content analysis for qualitative research focusing on public policy messages. On a basis of these findings of qualitative research, research questions are elaborated. This study investigated the following research questions, based on Extended Fishbein Model and other related theories and concepts.

RQ1: How do 'attitude estimates' concerning public policy such as behavioral beliefs and evaluations affect 'differential attitudes' after perceiving public policy messages?

RQ2: How do 'estimates of subjective norms' concerning public policy such as normative beliefs and motivations to comply affect 'differential subjective norm' (i.e., attitude toward public policy messages based on subjective norm) after perceiving public policy messages?

RQ3: How do 'differential attitudes' toward public policy affect 'differential intention' to switch attitude to public policy?

RQ4: How do 'differential subjective norms' affect 'differential intention' to switch attitude to public policy?

RQ5: How does 'differential intention' to switch attitude to public policy affect 'behavioral change' to follow the policy?

In particular, concerning research question 1 and 2, this paper further explores the effects of 'attitudes estimates' on 'differential attitudes' and the effects of 'estimates of subjective norms' on 'differential subjective norms' based on perception of public policy messages: positive or negative. Therefore, the additional research questions are as follows;

RQ1a: Is the effect of attitude estimates on differential attitudes different whether the audiences perceive print advertisements positively or negatively?

RQ1b: Is the effect of attitude estimates on differential attitudes different whether the audiences perceive direct TV advertisements positively or negatively?

RQ1c: Is the effect of attitude estimates on differential attitudes different whether the audiences perceive indirect TV advertisements (e.g., Product Placement) positively or negatively?

RQ2a: Is the effect of estimates of subjective norms on differential subjective norm whether the audiences perceive print advertisements positively or negatively?

RQ2b: Is the effect of estimates of subjective norms on differential subjective norm whether the audiences perceive direct TV advertisements positively or negatively?

RQ2c: Is the effect of estimates of subjective norms on differential subjective norm whether the audiences perceive indirect TV advertisements (e.g., Product Placement) positively or negatively?

II. LITERATURE REVIEW

Studies on the consumer-oriented management have been generated from the 1960s with the initiation of the scholar, Theodore Levitt (1960), who stated the term "marketing myopia." According to Levitt (1960), the purpose of all organization is to "find and keep customers" and to do this, they should take an effort to enhance competitive advantage. In 2010, Smith, Drumwright, and Gentile mentioned "new marketing myopia", which is "Marketers suffering from the new marketing myopia view the customer only as a

consumer—a commercial entity seeking to satisfy short-term, material needs through consumption behaviors (p.4)." In other words, marketers should further consider the relationship with consumer instead of considering them as a tool for earning money. Even though the ultimate purpose of marketing is to increase sales and its profits, that aims seem to be more like hidden agenda and apparently marketers in private sector need to focus on customer relation management. Many researchers studied that the person's attitude affects his or her intention and behavior (Ajzen and Fishbein, 1980; Solomon, 2009; Blackwell, Miniard, and Engel, 2006). those theories have been mainly applied to products in private sector in order to maximize profits. On the other hand, those proposed theories such as Fishbein model, behavioral learning theory, and cognitive learning theory are also applied to public sector to maximize the effect of public policy messages, because a key factor to public policy is to create a favorable recognition toward the policy. That leads to follow the policy.

It is obvious that public and private messages have differences (e.g., aims), but, at the same time, those who work for private sector and public sector are all necessary to focus on their customers. This similarity inspired this study especially to explore public policy message with application of customer behavior model in private sector. Marketers in nonprofit organization (i.e., governmental officers) also need to put an emphasis on the relationship with people as consumers (or customers) of public policy. Those customers perceive the public policy with the consideration of relations with the products (e.g., public policy) that they consume and they develop their attitude toward the policy and change their behavior.

In this context, this study examines the effect of public policy messages by monitoring whether the respondents change their attitudes and behavior toward public policy based on public policy messages.

2.1 Conceptual Framework

To analyze the effectiveness of public policy messages, several concepts and theories in marketing, especially regarding messages as a part of Integrated Marketing Communications, need to be reviewed in advance. Marketing has important impacts on society both positively and negatively: the former through its role in generating satisfying commercial transactions and the latter through its potential to deceive and distort social norms and values (Gundlach and Wilkie 2009; Andreasen 2012). The current American Marketing Association (AMA) definition of marketing is as follows:

"Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, marketers, and society at large" (Andreasen,2012)

According to Andreasen(2012), nonprofit and social marketers concern whether they are continuing toward desired outcomes. For commercial marketers, the desired outcomes are clear: "increasing sales". As table 1 shows, commercial marketing focuses on sales and profits. However, social and nonprofit marketers' desired outcomes are hard to be measured. Social and nonprofit marketing puts much emphasis on behavior and social changes (See table 1).

Table 1. Three Zones of the Value Chain: Commercial and Social/Nonprofit Marketing

Level	Commercial Marketing	Social/Nonprofit Marketing
Internal		
1. Inputs	Organizational budgets	Organizational budgets
	Staffing	Volunteers
	Internal support	Donations
		Corporate support
2. Activities	Strategy creation and execution	Strategy creation and execution
	Sales campaigns	Behavior change campaigns
		Fundraising campaigns
		Volunteering events

		Corporate development
External		
4. Results management	Sales	Behavior changes
		Volunteer retention
		Donation levels/loyalty
		Corporate collaboration
5. Impacts	Profit/return on investment	Social change
		Nonprofit/social program growth

Source : Wei-Skellern and others (2007, p. 332)

In order to help understanding those desired outcomes of social and nonprofit marketing, various concepts such as advertising as a part of IMC and attitudes, and theories regarding attitudes, cognition, awareness, and behavior will be reviewed in this research.

2.1.1 Advertising as a Perspective of Integrated Marketing communications (IMC)

Integrated Marketing communications (IMC) is a significant part of marketing strategic tool, because it plays a pivotal role to deliver the messages to customers. According to Don Shultz (2004) of Northwestern University, IMC was first defined in the late 1980s as follows:

"A concept of marketing communications planning that recognizes the added value of a comprehensive plan that evaluates the strategic role of a variety of communication disciplines (such as advertising, direct response, sales promotion, etc.) and combines them to provide clarity, consistency and maximum communication impact."

Since then, the concept of IMC has been substantially improved such as focusing on audiences instead of communications activities and stressing a strategic view of marketing communications, not tactical (Shultz, 2004). So, this is his new, improved, ready-to-use definition of IMC:

"IMC is a strategic business process used to plan, develop, execute and evaluate coordinated, measurable, persuasive brand communications programs over time with consumers, customers, prospects, employees, associates and other targeted relevant

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external and internal audiences. The goal is to generate both short-term financial returns and build long-term brand and shareholder value (Belch and Belch, 2007)."

This definition is not quite accurate. However, it implies some important aspects. This definition views IMC as an ongoing strategic business process rather than just sum of various communication activities. Figure 1 shows that marketers use the various promotional-mix elements—advertising, sales promotion, direct marketing, publicity/public relations, and personal selling—to inform consumers about their products, their prices, and places where the products are available (Belch and Belch, 2007).
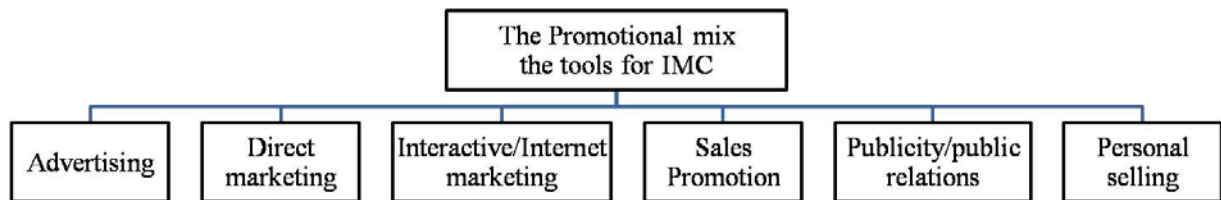
Figure 1. Elements of the Promotional Mix

Source : Belch and Belch (2007, p.17).

Advertising is one of the promotional mix, which is the best-known and most widely discussed form of promotion, probably because of its pervasiveness. Belch and Belch (2007) defines advertising as any paid for of non-personal communication about an organization, product, services, or idea by an identified sponsor. The paid refers to the fact that the space or time for an advertising message generally must be bought. The non-personal component means that advertising involves mass media(e.g., TV, radio, magazines, newspapers) that can transmit a message to large groups of individuals, often at the same time (Belch and Belch, 2007). In other words, advertising is the most cost-effective way to deliver messages to large audiences.

Advertising is also a precious tool for developing company or brand equity as it is a powerful way to offer information to consumers and to affect their perceptions. Advertising

can be used to create favorable and unique images and associations for a brand which can be very important for companies selling products or services that are difficult to differentiate on the basis of functional attributes (Belch and Belch, 2007). Brand image plays an significant role in buying many products and services, and advertising is still recognized as one of the best ways to build a brand image (Belch and Belch, 2007). In other words, advertising help people build awareness, image of brand, service, products, and so on.

2.1.2 Advertising Effectiveness

A variety of commercial studies identified factors (e.g., image, vividness, repetition, types of messages, etc.) that determine whether a commercial message will be persuasive (Solomon, 2009). Among various factors, the most important one is whether the advertising includes brand-differentiating message (Stewart and Furse, 1985). In other words, the ads need to stress a unique feature of product to appeal and attract consumers' attention.

Table 2. Positive and Negative Effects of Elements in Television Commercials

Positive effects	Negative effects
Showing convenience of use	Extensive information on components, ingredients, or nutrition
Showing new product or improved features	
Casting background (i.e., people are incidental to message)	Outdoor setting (message gets lost)
	Large number of on-screen characters
Indirect comparison to other products	Graphic displays
Demonstration of the product in use	
Demonstration of tangible results (e.g., bouncy hair)	
An actor playing the role of an ordinary person	
No principal character (i.e., more time is devoted to the product)	

Source : Stewart and Furse (1985);Solomon (2009, p.301)

As table 2 shows, nonetheless, the effects differ depending on how the message is said as well as what is said such as the message in word or pictures and the repeated number of the messages (Solomon 2009).

2.1.2.1 Advertising effectiveness aiming at profit advertising

The Elaboration Likelihood Model (Petty, Cacioppo and Schumann, 1983) suggests that "different kinds of appeals may be most effective for different audiences" (p.138) due to the different level of involvement. Solomon (2009) presented various ways of appeals to persuade customers: emotional versus rational appeals, sex appeals, humorous appeals, and fear appeals. Those kinds of appeals except for fear appeals are usually used in private sector for profit marketing, while fear appeals are applied in nonprofit and social marketing because their contents are often linked to social or subjective norms.

Emotional appeals refer to stimulate audiences' emotion by appealing to the heart and rational appeals mean to appeal to the head. Depending on the nature of products, the effects differ (Solomon, 2009). In the case of sex appeals, the ads that include sexual or erotic contents successfully draw consumers' attention, but at the same time, they appear to be rather ineffective (Solomon, 2009). That is, they do not always succeed in increasing desired outcomes. They have only an effect when the advertising product is itself related to sex (e.g., Viagra) (LaTour and Henthorne, 1994). Furthermore, the effectiveness of sex appeal ads differs based on sex: male and female (Nudd, 2005). According to Nudd (2005), men is likely to prefer the products advertised in sexual ads, while women is likely to buy the products non-sexually advertised. Humorous appeals usually succeed in getting attention (Madden and Weinberger, 1982). Humorous advertisements may curve "counterarguing" by providing "a source of distraction" so that this leads to "increase the likelihood of message acceptance" (Gardner, 1970; Solomon, 2009 p.307)

2.1.2.2 Advertising effectiveness aiming at nonprofit and social advertising

Fear appeals stress "the negative consequences that can occur unless the consumer changes a behavior or an attitude" (Solomon, 2009, p. 308). A critical example of fear appeal

advertisements is warning messages (e.g., anti-smoking ads, alcohol warning messages, etc.). Its effectiveness is maximized when the credibility of the ads' source is high (Sternthal and Craig, 1974). In particular, alcohol and cigarette warning messages are related to health so that those messages are likely to adopt in nonprofit and social organizations. Rim (2010) explored warning messages on conditional principles and predicting social behavior in his thesis. In the united states, since the 1990s', lots of researches on warning messages (Atkin, McCardle and Newell, 2008; Torres, Sierra and Heiser, 2007; Stewart and Martin, 1994; Clark and Brock, 1994; Barlow and Wogalter,1993; Snyder and Blood, 1992; Andrews and Netemeyer, 1990) have been conducted. Snyder and Blood (1992) cited this trend of research as the federal government's regulation that mandated warning labels for alcohol beverage starting in November, 1989.

Barlow and Wogalter (1993) examined the effectiveness of alcohol warning messages in media such as print and TV ads. According to this study, warning messages in media deliver the information when the messages were introduced in a salient form (Barlow and Wogalter, 1993). This is also supported by "brand-differentiating message" that Stewart and Furse (1985) mentioned. Clark and Brock (1994) employed "the persuasive communications approach" to analyze the effectiveness of warning messages on attitudes compared to the level of recall of the messages. In addition, Andrews and Netemeyer, 1990 posited that Persuasive communications theory (cf. Ajzen and Fishbein 1980; McGuire, 1976; Petty and Cacioppo 1986) could be a helpful framework to boost the effectiveness of warning label information. Stewart and Martin (1994) mentioned effects of message design; context effects; and effects of warnings on behavioral intention and behavior. Through the argument, Stewart and Martin (1994) stated that "the question is not whether warnings can affect behavior, but under what circumstances and among what types of consumers warnings influence behavioral intention and actual behavior" (p.11) In the same context, Mayer, Smith and Scammon

(1991) cited a reason of "failure to find effects of warning labels (for alcohol) on risk perceptions (dangers of drinking while pregnant) and behavior (drinking and driving)" as a content of warning messages. They stated that warning messages could be more effective with specific information not widely unknown by concluding that "without such information, one should not be surprised if people ignore labels and rationalize their content" (p.714). Those previous researches consistently argue that the advertisements for nonprofit and social organizations are effective when they are specific and differentiated from the existing advertisements.

2.1.3 Types of Advertising

In this study, print and TV ads are adopted to conduct qualitative research. In particular, TV advertising is categorized as direct TV ads and indirect TV ads (e.g., product placement: PPL). Grass and Wallace (1974) argue that print advertising is different from TV advertising in terms of attention level especially due to a function of their self-selection characteristics. Print media relies on the self-selection process to produce ad readers, while television depends on the self-selection process to produce commercial nonviewers." (Grass and Wallace, 1974) Belch and Belch (2007) also said that TV has numerous advantages over other media. TV is superior in terms of "creativity and impact, coverage and cost effectiveness, captivity and attention, and selectivity and flexibility." (Belch and Belch, 2007) The amount of attention a person pays to advertising differs depending on the self-selective characteristics of TV viewing and print reading and this seems to be related to the difference in communications effectiveness of print and TV (Grass and Wallace, 1974).

In the case of drug advertising, print ads were necessary to include a detailed "brief summary" of risk and other information, while TV ads "much shorter but nonetheless lengthy "major statement" of risks, with making "adequate provision" for viewers to obtain full FDA-approved prescribing information." (Calfee, 2002, p.174) This indicates indirectly that TV

ads can include much more contents to deliver to customers than that of print ads. In this context, to marketers, TV advertising is more effective method.

As a critical example of indirect TV advertisement, product placement (PPL) is a way to reach audiences by and large among various tools of IMC. PPL can be defined as the "inclusion of branded products or brand identifiers, through audio and/or visual means, within mass media programming" (Karrh, 1998). And it can be also defined as a "paid product message aimed at influencing movie (or television) audiences via the planned and unobtrusive entry of a branded product into a movie (or television program)" (Balasubramanian, 2000; Alwitt and Prabhaker, 1994). In this context, PPL refers to the exposure of for-profit products in mass media indirectly, but these days the Korean government is also advertising its policy through PPL. For example, the Korean Ministry of Health and Welfare spent about 150 million won of its budget allocated for non-smoking of 28.1 billion won on the soap opera titled "Secret Garden(2011)" to conduct anti-smoking campaign in 2011 (Lee, 2011). In addition, the Korean Ministry of Environment also put its budget on advertising its policy of saving the earth and reducing carbon consumption by PPL in variety show titled "unlimited challenge". This case was used for the survey of this study.

2.1.4 Attitude toward Advertising

Attitudes are defined as "psychological construct, a way of conceptualizing the intangible" and cannot be observed or measured directly as their existence is estimated from their consequences (Aaker, Kumar and Day, 2001) The term attitude is widely used, but this study the definition of attitude is limited to "a consumer's overall, enduring evaluation of a concept or object, such as a person, a brand, a service" (Arnould, Zinkhan, and Price, 2002).

Psychologist Daniel Katz introduced the functional theory of attitudes to explain how attitudes affect social behavior (Lutz, 1978). Those attitude functions are identified by Katz: utilitarian function, value-expressive function, ego-defensive function, and knowledge

function (Solomon, 2009) which "explain the role of attitudes in guiding and shaping social behavior" (Arnould, Zinkhan, and Price, 2002). The utilitarian function is related to rewards and punishments and similar to operant conditioning (or instrumental conditioning), "where consumers learn through repetition and the consequences that follow stimuli" (Arnould, Zinkhan, and Price, 2002). The value-expressive function is related to a consumer's central values or self-concept. The consumer chooses the product because of "what product says about him or her as a person" (Solomon, 2009). That is, consuming a typical product express a consumer's value or characteristics by itself. The ego-defensive function of attitude serves as a protective mechanism of the consumer from both external and internal feelings of threat. Consumers feel security by using a typical product to express the concept that the consumer want to preserve (Solomon, 2009). "The knowledge function refers to the need for order, meaning, and structure." (Arnould, Zinkhan, and Price, 2002)

In addition to those functions of attitudes, the attitudes consist of three component: affect, behavior, and cognition. These three components of an attitude are noted as the ABC model of attitudes (Solomon, 2009). In order to explain the relations of these three components, attitude researchers developed the concept of a hierarchy of effects: "i) the standard hierarchy of effects, which emphasizes a problem-solving process; ii) the low-involvement hierarchy of effects, which is based on consumer experiences, good or bad; and iii) the experiential hierarchy of effects, which emphasizes emotional responses" (Arnould, Zinkhan, and Price, 2002).

Among various attitudes, in particular, this research explores the attitude toward advertising. Attitude toward advertising is related to emotional response to an advertisement (Shanahan, Hopkins, and Carlson, 2010). "Bagozzi and Moore (1994) suggest that when confronted with images that generate negative emotions, viewers attempt to cope in some way and that this can include empathy for the victim (Shanahan, Hopkins, and Carlson, 2010,

p.222)." Batson and others (1986) found that "negative emotional responses often accompany empathy and precede helping behavior (Shanahan, Hopkins, and Carlson, 2010)." This case is especially applied to nonprofit sector so that the term of "negative emotional response" actually refers to positive perspective. These emotions and attitudes may lead to positive outcomes.

2.2 Theoretical Background

2.2.1 Extended Fishbein Model

Extended fishbein model is "A theory of reasoned action"(Ajzen and Fishbein, 1980) to predict behavior based on attitude. According to Ajzen and Fishbein (1980), the theory assumes that human beings are generally quite rational and make systematic use of the information which is available to them. As the figure 2 shows, behavior can be explained in terms of a limited number of concepts such as beliefs, attitude, subjective norms and intention (Ajzen and Fishbein, 1980).
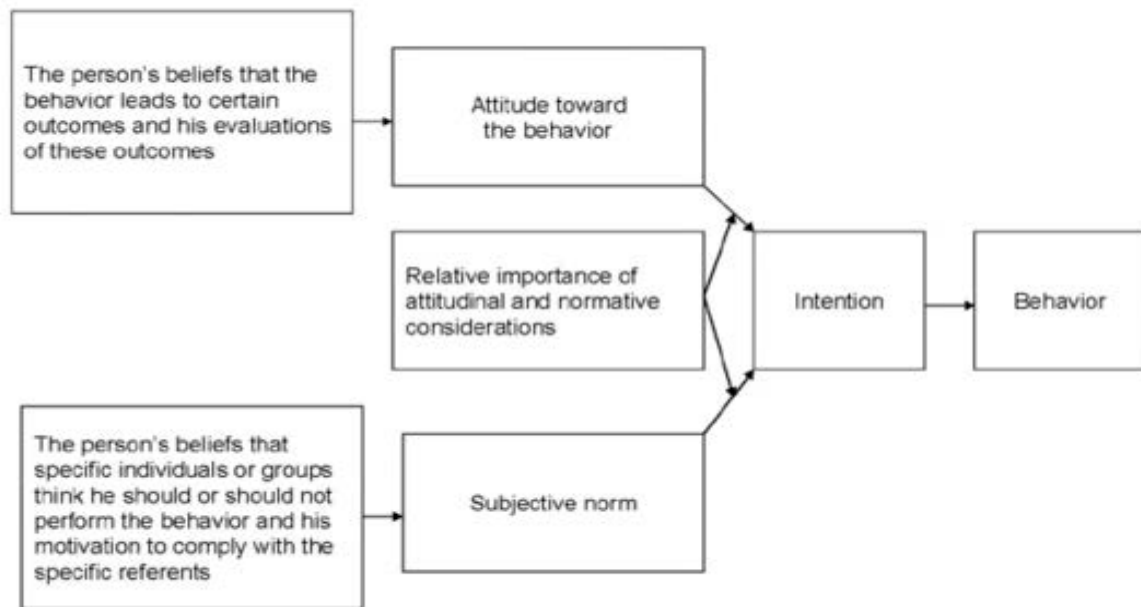
Note: Arrows indicate the direction of influence

Figure 2. Factors Determining a Person's Behavior

Source: Ajzen and Fishbein (1980, p.8)

"Generally speaking, individuals will intend to perform a behavior when they evaluate it positively and when they believe that important others think they should perform it"(Ajzen and Fishbein 1980). In this context, Determinants of intentions are personal in nature and reflecting social influence (Ajzen and Fishbein 1980).

"The personal factor is the individual's positive or negative evaluation of performing the behavior; this factor is termed attitude toward the behavior" (Ajzen and Fishbein 1980). "Attitudes are a function of beliefs. Generally speaking, a person who believes that performing a given behavior will lead to mostly positive outcomes will hold a favorable attitude toward performing the behavior, while a person who believes that performing the behavior will lead to mostly negative outcomes will hold an unfavorable attitude (Ajzen and Fishbein 1980)."

The second determinant of intention is reflecting social influence. How the person perceives the social pressures that put himself or herself to perform or not to perform the

behavior. "Since it deals with perceived prescriptions, this factor is termed subjective norm. (Ajzen and Fishbein 1980)" "Subjective norms are also a function of beliefs, but beliefs of a different kind, namely the person's beliefs that specific individuals or groups think he should or should not perform the behavior. These beliefs underlying a person's subjective norm are termed normative beliefs. Generally speaking, a person who believes that most referents with whom he is motivated to comply think he should perform the behavior will perceive social pressure to do so (Ajzen and Fishbein 1980)."

According to the theory, the degree to which people like or dislike public policy may have little to do with whether or not they follow the policy. Instead this behavior is assumed to be determined by the person's attitude toward the policy and by his subjective norm (Ajzen and Fishbein 1980). Then, when it comes to the situation of conflict between attitude toward the behavior and subjective norm, how these factors affect one's intention? "To answer this question, we need to know the relative importance of the attitudinal and normative factors as determinants of intentions…. Frequently, both factors are important determinants of the intention. In addition, the relative weights of the attitudinal and normative factors may vary from one person to another." (Ajzen and Fishbein 1980) In a nutshell each "successive step in this sequence from behavior to beliefs provides a more comprehensive account of the cause underlying the behavior" (Ajzen and Fishbein 1980).

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EXTERNAL VARIABLES

Demographic Variables
Age, sex
Occupation
Socioeconomic status
Religion
Education

Attitudes toward targets
Attitudes toward people
Attitudes toward institutions

Personality traits
Introversion-Extraversion
Neuroticism
Authoritarianism
Dominance
```

Beliefs that the behavior leads to certain outcomes (b_i)

Evaluation of the outcomes (e_i)

Beliefs that specific referents think I should or should not perform the behavior (NB_i)

Motivation to comply with the specific referents (MC_i)

Attitude toward the behavior (A_{act})

Relative importance of attitudinal and normative components

Subjective norm (SN)

Behavioral Intention (BI)

– – – – –>   Possible explanations for observed relations between external variables and behavior

——————>   Stable theoretical relations linking beliefs to behavior

Figure 3. Extended Fishbein Model (Indirect Effects of External Variables on Behavior)

Source: Ajzen and Fishbein (1980, p.84)

In addition, "The external variables, including personality characteristics, demographic variables, and such factors as social role, status, and intelligence, will have an effect on behavior only to the extent that they influence the determinants of that behavior shown" in figure 3 (Ajzen and Fishbein 1980).

Despite those outstanding aspects of the extended Fishbein model to estimate behavior, there have been limitations. Through this model, instead of outcomes of behavior (such as consumption or word of mouth) only an actual purchase behavior is addressed. In addition, some results are not caused by consumer's intention, rather other elements. Under those circumstances out of consumer's control, the extended Fishbein model cannot correctly estimate the consumer's behavior. (Arnould, Zinkhan, and Price, 2002)

2.2.2 Dual Component Model of Brand Attitudes

Brand attitudes are composed of two elements; visual and verbal components. (Mitchell, 1986) As the saying, "One picture is worth a thousand words", goes marketers often depend on vivid illustrations or photography when they advertise their products. (Grass and Wallace, 1974) On the other hand, Solomon (2009) argues that "a picture is not always as effective at communicating factual information." (p.301). According to Solomon (2009), even though both verbal and visual messages contain same information, the reaction could differ. Verbal messages have an impact on the utilitarian aspects of a product, while visual messages affects aesthetic evaluations (Solomon, 2009) Verbal elements accompanied with picture have more impacts on attitudes especially when "the illustrations is framed (the messages in the picture strongly relates to the copy)" (Hirschman and Solomon, 1984). In addition, a verbal message requires more effort to process so that it is most appropriate for high-involvement situation. (Solomon 2009) While, verbal materials need to exposure much more frequently than visual images to obtain the desired effect, because the visual image is more powerful for information retrieval over time.(Childers and Houston, 1984)
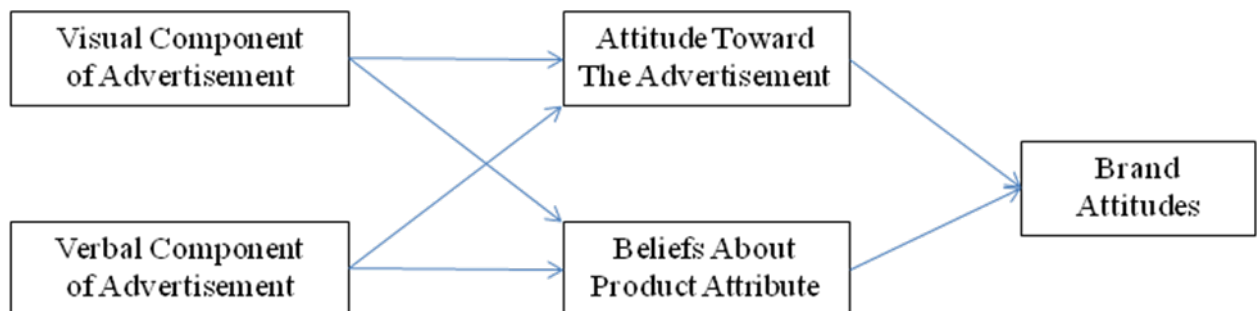
Figure 4. Dual Component Model of Brand Attitudes

Source: Solomon (2009, p.302)

The dual component model summarized this process: how these two components affect brand attitude (See figure 4). In nonprofit and social marketing, brand refers to a nonprofit or social organization. That is why the dual component model of brand attitudes could be

applied to nonprofit sector. Brand attitudes have something to do with attitudes toward product. In this study, the product is the public policy and this research examines the impacts of public policy messages.

2.2.3 The Elaboration Likelihood Model

The elaboration likelihood model (ELM) assumes that when a person perceives a message he or she starts to process resulting in behavior and attitude changes (Petty, Cacioppo and Schumann, 1983). The communication such as messages is high or low involved depending on a personal relevance of the information and the person takes "central route" or "peripheral route" to persuasion as figure 5 shows.
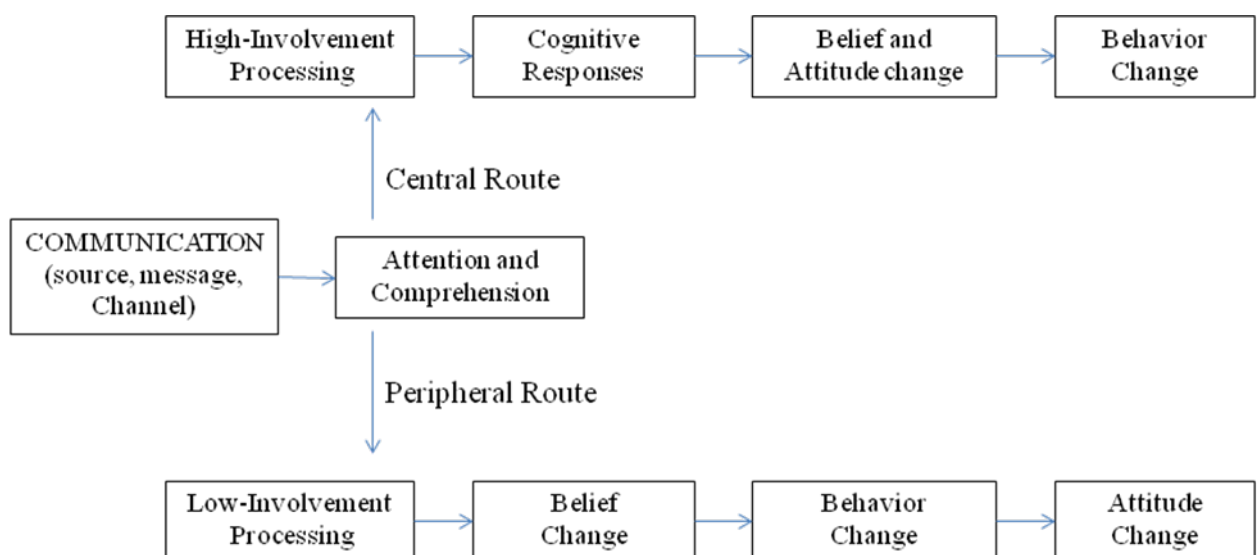
Figure 5. The Elaboration Likelihood Model of Persuasion

Source: Solomon (2009, p.311)

The central route to persuasion is a form of long-term acceptance through "thoughtful reflection on information received", while peripheral route to persuasion takes shorter time to persuade based on "affective cues" (O'Shaughnessy and O'Shaughnessy, 2007, p.126). The central route to persuasion occurs when the consumers carefully focus on the message content. "If a person generates counterarguments in response to a message, it is less likely

that she will yield to the message, whereas if she generates further supporting arguments, it's most likely she'll comply." (Solomon, 2009, p.312; Olson, Toy, and Dover, 1982) That is to say, through the central route to persuasion, the audience has only interested in the product itself. On the other hand, the peripheral route to persuasion occurs when the consumers are not really motivated to the messaged content and instead they are interested in other cues such as "the product's package, the attractiveness of the source, or the context in which the message appears" (Solomon, 2009, p.312).

The ELM has received many research supports and it is applied to estimate consumer's behavior (Bitner and Obermiller, 1985; Gardner, 1985; Park and Young, 1986; Petty, Cacioppo and Schumann, 1983; Higie, Feick, and Price, 1991; Trampe, Stapel, Siero, and Mulder, 2010). With regard to those two routes, "there is considerable agreement that high involvement messages have greater personal relevance and consequences or elicit more personal connections than low involvement messages" (Engel and Blackwell, 1982; Krugman, 1965; Petty and Cacioppo, 1979; Sherif and Hovland, 1961; Petty, Cacioppo and Schumann, 1983, p.136). Andrews and Shimp conducted typical study in 1990 using the technique of *Thought listing* and analyzed the participants' thoughts. The study manipulated three variables crucial to the ELM: message-processing involvement, argument strength, and source characteristics, and found that "high-involvement subjects had more thoughts related to the ad messages than did low-involvement subjects, who devoted more cognitive activity to the sources the ad presented" (Solomon, 2009, p. 313). Nevertheless, "accumulated research on persuasion clearly indicates that neither the central nor the peripheral approach alone can account for the diversity of attitude-change results observed." (Petty, Cacioppo and Schumann, 1983, p. 136) Therefore, the key issue to persuasion is "under what conditions is persuasion most likely via each of the two routes" (Bitner and Obermiller, 1985, p.420). In

addition "the same communications variable can be both a central and a peripheral cue, depending on its relation to the attitude object" (Solomon, 2009, p.313).

2.2.4 Behavioral Learning Theories

Behavioral learning theories suppose that responses to external events result in learning (Solomon, 2009). Behavioral learning theories only focus on "external variables" instead of "internal processes" and emphasize the observable aspects of behavior. Thus, the behaviorists perceive consumers' learning as a black box between "Stimulus" and "Responses" (Solomon, 2009). The behavioral learning theories have two major approaches: classical conditioning and instrumental conditioning. Classical conditioning refers to the situation that there are a stimulus that elicits a response (unconditioned stimulus: UCS) and another stimulus that initially does not elicit a response on its own (conditioned stimulus: CS). Overtime, this second stimulus causes a similar response (conditioned response: CR) because the consumers associate it with the first stimulus (Solomon, 2009). Concerning this theory, Ivan Pavlov, a Russian physiologist conducted representative experiment with dog, bell (CS), meat powder (UCS). At the end, dog began to salivate (CR) at the sound of the bell (CS). Those conditioning effects are likely to occurs by repetition (Rescorla, 1988). When it comes to the medium, the most effective strategy is a combination of spaced exposures such as TV advertising complemented by Print advertising (Janiszewski, Noel, and Sawyer, 2003).

In addition to classical conditioning, the second approach is instrumental conditioning (or operant conditioning). This conditioning occurs when a person learn to perform behavior for positive outcomes instead of negative outcomes (Solomon, 2009). The psychologist, B.F. Skinner presented the effects of instrumental conditioning by teaching animals to perform several activities by systematically rewarding them for desired behaviors (Foxall, 1994). That is, the instrumental learning refers to gaining a reward and avoiding a punishment. Solomon

(2009) stated that this instrumental conditioning occurs on one of three ways: positive reinforcement, negative reinforcement, and punishment.

Positive Reinforcement

Purchase Need → Product Purchase → Product Consumption → Receiving Positive Outcomes

Positive Reinforcement

Negative Reinforcement

Purchase Need → Product Purchase → Product Consumption → Avoiding/Reducing Negative Outcomes

Negative Reinforcement
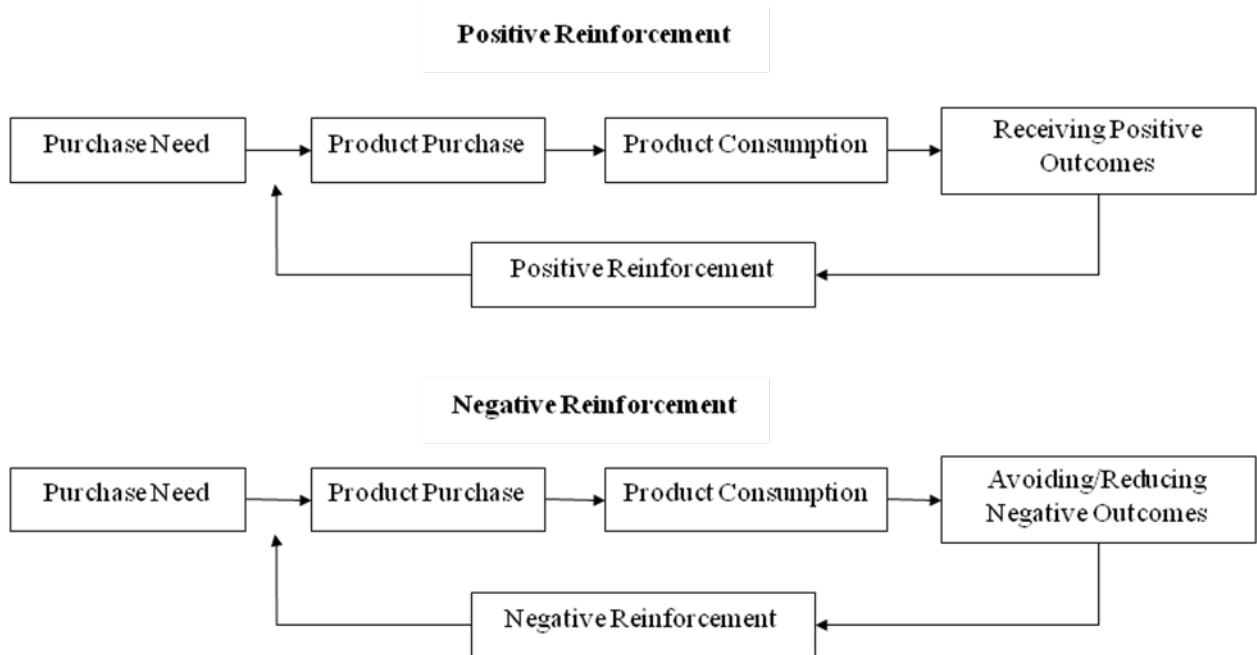
Figure 6. The Flow of Positive Reinforcement and Negative Reinforcement

Source: Blackwell, Miniard and Engel (2006, p.203)

Literally speaking, positive reinforcement is to keep offering a reward when the response is desired and negative reinforcement is to introduce undesired situation that might happen to the consumers if they do not perform desired behavior. Punishment is to provide punishment not to repeat such a behavior. Figure 6 shows the flow of positive and negative reinforcements.

Krugman (1965) argues that those reinforcements result in positive attitude after the trial. In addition, Kassarjian (1978) suggests, "perhaps the middle range social psychology theories are best reserved for high involvement cases, and behavioral learning theory should be used in low involvement cases…marketing man (Bagozzi 1975) is more the prototype for low involvement cases" (Rothschild and Gaidis, 1981, p.76)

2.2.5 Cognitive Learning Theory

Contrary to behavioral learning theory, cognitive learning theory puts an emphasis on the internal mental processes (Solomon, 2009) Rothschild and Gaidis, (1981) stated cognitive learning focusing on "the internalization of messages rather than the learning of behavior patterns" (p.76) As a part of cognitive learning theories, observational learning appears to be linked to this research. Observational learning occurs "when people watch the actions of others and note the reinforcements they receive for their behaviors" (Solomon, 2009, p.102). When the consumers watch messages, they perceive the information and begin to process for learning and they do "modeling" also. Modeling is to imitate the behavior of others. When these techniques are applied to advertising, the audiences watch the actions of actor or actress in advertising, especially indirect ads like product placement (PPL) and perform his or her behavior.

According to Bandura (1986), under the following four conditions observational learning occur in the form of modeling as the figure 7 depicts.
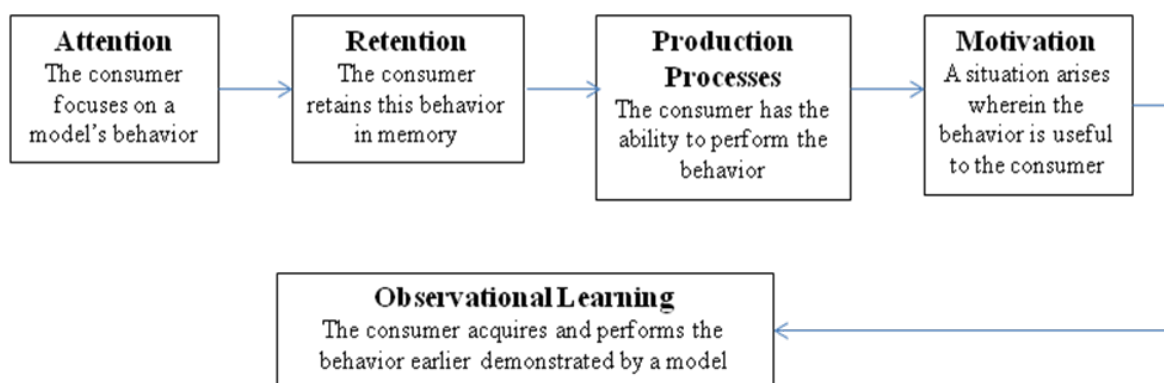
Figure 7. The Observational Learning Process

Source : Bandura (1986)

The four conditions are "i) the consumer's attention must be directed to the appropriate model, whom, for reasons of attractiveness, competence, status, or similarity, he

must want to emulate; ii) the consumer must remember what the model says or does; iii) the consumer must convert this information into action; iv) the consumer must be motivated to perform these actions" (Solomon, 2009, p.103).

III. Hypotheses Development

Based on literature review and research questions, 13 hypotheses are developed and tested in this study.

3.1 Framework of the Study

Proposed model for this study is modified from the Extended Fishbein Model of Ajzen and Fishbein (1980). As figure 8 shows, 'attitude estimates' based on beliefs and evaluations concerning public policy lead to 'differential attitude'. 'Estimates of subjective norm' based on normative beliefs concerning public policy and motivations to comply the policy lead to 'differential subjective' norm. Both 'differential attitude' and 'differential subjective norm' are linked to 'differential intention' and finally it comes to' behavioral change'. When 'attitude estimates' and 'estimates of subjective norm' lead to 'differential attitude' and 'differential subjective norm' respectively, public policy messages stimulate their linkage if any. Each concept of the terms will be reviewed in the following chapter (i.e., 3.2. hypothesis development). The effects differ based on perception of advertising, positive vs. negative. In this study, proposed conditional principles are print, TV direct, and TV non-direct (PPL) advertisements.

Relative importance of attitude and subjective norm does not need to measure in this study. In this case, examples of public policy messages are not conflicting each other so that the effect of differential attitude on differential intention and the effect of differential subjective norm on differential intention move toward same direction, unlike Ajzen and Fishbein(1980) supposed.

24
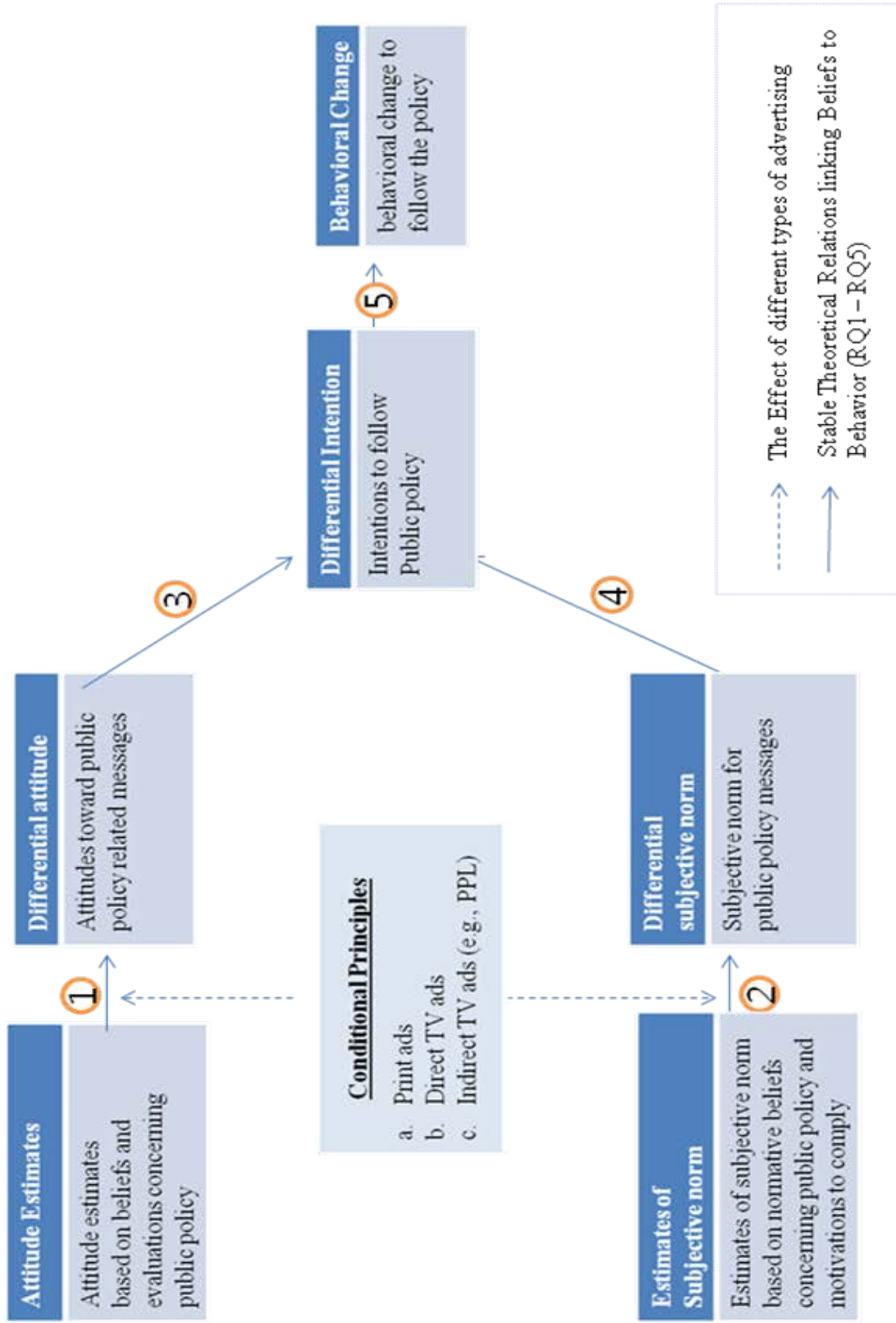
Figure 8. A Framework of the Effectiveness of Public Policy Massages on Conditional Principles (Modified from Extended Fishbein Model)

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3.2 Hypothesis Development

3.2.1 The Effect of Attitude Estimates on Differential Attitudes

In this research, the first hypothesis focuses on the relationship between 'attitude estimates' toward public policy messages and 'differential attitude' toward public policy messages after seeing the messages.

This study assumes that 'attitude estimates' are based on beliefs and evaluations concerning public policy. According to Solomom (2009), attitude is "a lasting, general evaluation (including oneself), objects, or issues". And Ajzen and Fishbein (1980) wrote that attitudes are determined by "the set of salient beliefs he holds about performing the behavior." In other words, if someone has "salient beliefs" toward public policy whether it is positive or negative, he or she will has attitudes toward public policy messages. These salient beliefs have something to do with its consequences. Therefore, evaluating this consequence is important to understand his or her attitude toward the behavior (Ajzen and Fishbein 1980). Attitude toward a behavior means "A person's judgment that performing the behavior is good or bad that he is in favor of or against performing the behavior." (Ajzen and Fishbein 1980)

With respect to 'differential attitude' shown in figure 8, this study applied 'differential attitude' as attitudes toward public policy messages after seeing three types of public policy messages, print, TV direct, and TV non-direct(PPL) advertisements.

H1: 'Attitude estimates' concerning public policy such as behavioral beliefs and evaluations affect 'differential attitudes' after perceiving public policy messages.

In addition, this study further examines the relationship between 'attitude estimates' and 'differential attitude' would differ based on perception of the messages, positive vs. negative, especially regarding three representative types of messages, print, direct TV, and non-direct TV advertisements..

H1a: *The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of prints ads, positive vs. negative.*

H1b: *The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of direct TV ads, positive vs. negative.*

H1c: *The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of indirect TV ads (e.g., Product Placement), positive vs. negative.*

3.2.2 The Effect of Estimates of Subjective Norm on Differential Subjective Norm

In this research, the second hypothesis focuses on the relationship between 'estimates of subjective norms' concerning public policy such as normative beliefs and motivations to comply and 'differential subjective norm' (i.e., attitude toward public policy messages based on subjective norm) after perceiving public policy messages.

According to Blackwell, Miniard, and Engel (2006), the socialization is "the processes by which people develop their values, motivations, and habitual activity" or "the process of absorbing a culture." Through Values Transfusion Model, Blackwell, Miniard, and Engel (2006) explain "how the values of a society are reflected in families, religious institutions, and schools, all of which expose and transmit values to individuals". Moschis(1987) also said that the process of consumer socialization occurs throughout life instead of a certain period. In this context, subjective norm, meaning "an additional component to the multi-attribute attitude model that accounts for the effects of what we believe other people think we should do" Solomon (2009), is important determinants to explain consumers' behavior. This subjective norm is made based on normative beliefs or "the total set of salient normative beliefs, each weighted by motivation to comply" instead of 'behavioral belief' (Ajzen and Fishbein 1980) Subjective norm refers to " a specific behavioral prescription attributed to a

generalized social agent" (Ajzen and Fishbein 1980) In this regards, 'estimates of subjective norm' are based on normative beliefs concerning public policy and motivations to comply.

With respect to 'differential subjective norm' shown in figure 8, this study applied 'differential subjective norm' as subjective norm for public policy messages after seeing three types of public policy messages, print, TV direct, and TV non-direct(PPL) advertisements.

H2: 'Estimates of subjective norms' concerning public policy such as normative beliefs and motivations to comply affect 'differential subjective norm' (i.e., attitude toward public policy messages based on subjective norm) after perceiving public policy messages.

As same as applied to the first hypothesis, this study also explores the relationship between 'estimates of subjective norms' and 'differential subjective norm' would differ based on perception of the messages, positive vs. negative, especially regarding three representative types of messages, print, direct TV, and non-direct TV advertisements.

H2a: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of prints ads, positive vs. negative.

H2b: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of direct TV ads, positive vs. negative.

H2c: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of indirect TV ads (e.g., PPL), positive vs. negative.

3.2.3 The Effect of Differential Attitudes on Differential Intention

The third main hypothesis focuses on the relationship between 'differential attitudes' toward public policy messages and 'differential intention' toward public policy messages. According to the extended fishbein model (Ajzen and Fishbein 1980), "the person's intention to perform a given behavior is the immediate determinant of that behavior." So they argue

that in their theoretical framework, intention refers to behavioral intention. Behavioral intention consists of two main factors: "a personal or attitudinal component and a social or normative component." (Ajzen and Fishbein 1980)

According to the theory of Ajzen and Fishbein (1980), the first factor refers to the person's attitude toward performing the behavior under consideration (Ajzen and Fishbein 1980) as this paper reviewed with hypothesis 1. And concerning the second factor to behavioral intention, the hypothesis 4 will review.

With respect to 'differential intention' shown in figure 8, this study applied differential intention as behavioral intention toward public policy after seeing three types of public policy messages, print, TV direct, and TV non-direct(PPL) advertisements.

H3: 'Differential attitudes' toward public policy affect 'differential intention' to switch attitude to public policy.

3.2.4 The Effect of Differential Subjective Norm on Differential Intention

The forth hypothesis focuses on the effect of 'differential subjective norm' on 'differential intention'. As the third hypothesis reviewed, behavioral intention's second factor is "a social or normative component." (Ajzen and Fishbein 1980) This component deals with the influence of the social environment on intentions and behavior. (Ajzen and Fishbein 1980) To predict and understand the person's intention toward performing, it is also necessary to review his subjective norm. Therefore, this study explores how the subjective norm measured after seeing three types of public policy messages, print, TV direct, and TV non-direct (PPL) advertisements affects behavioral intention toward public policy.

H4: 'Differential subjective norm' affect 'differential intention' to switch attitude to public policy.

3.2.5 The Effect of Differential Intention on Behavioral Change

The fifth hypothesis focuses on the effect of 'differential intention' to switch attitude to public policy on 'behavioral change' to follow the policy. Behavior refers to "a consumer's actions with regard to an attitude object." (Solomon 2009). Because of the gap between one's intention and behavior, some researchers look for a consumer's past purchase behavior instead of knowing his or her intentions to predict his or her future behavior more effectively (Solomon 2009;Rim 2010).

This study, however, tries to measure the person's behavior by asking his or her plan to follow public policy in detail to explore the effect of 'differential intention' to switch attitude to public policy on 'behavioral change' to follow the policy based on three types of public policy messages.

H5: 'Differential intention' to switch attitude to public policy affects 'behavioral change' to follow the policy.

IV. Methodology

To analyze the effectiveness of public policy messages, this report adopted both methods; qualitative research and quantitative research. Qualitative research was conducted at first based on main research questions. The findings from qualitative research led to more detailed research questions to test hypothesis through the quantitative research.

4.1 Methodology for Qualitative Research

The qualitative research was conducted focusing on characteristics of content analysis, which are "objective, systematic, and quantitative" (Kassarjian, 1977). The main purpose of this qualitative research was to receive interviewees' opinions in order to further develop research questions concerning public policy messages. The qualitative research was made

through in-depth one on one interview with to two Koreans. One interviewee is 29-year-old woman (Student). She often watches television, in particular variety show and soap opera. Another interviewee is 30-year-old man (Accountant). He only sees the program in which he has interested. Two main questions for my qualitative research were as following: i) how different individual perceives public policy messages, depending on types of the messages; and ii) what factors could contribute to follow public policy.

4.2 Methodology for Quantitative Research

The quantitative research was conducted through the survey. The survey questionnaire was designed on a basis of findings from qualitative research. The main purpose of this paper's quantitative research is to estimate the effectiveness of public policy messages on conditional principles. To this end, this study analyzed i) the relationships between estimate attitudes, subjective norms, differential attitudes, differential subjective norm, intentions and behavioral change with perception of public policy related messages especially regarding environmental policy, and ii) how the effectiveness is different depending on conditional principles such as types of public policy messages (i.e., print and TV advertisements) and a way of exposure (i.e.,direct TV and non-direct TV advertisements).

Among a variety of public policy messages, in particular, this study applies environment-oriented public policy messages. About 72 survey questions were developed for this research. An online survey website, 'Qualtrics' was used to conduct the quantitative research. Seven-point semantic scale was applied for each construct (e.g., 1 is 'strongly disagree', and 7 is 'strongly agree'). The survey questionnaire was asked both in English and Korean up to the respondents. The questions were at first written in English, translated in Korean and then back translated. Sample size was 197, and all respondents were Koreans, who live in Korea and watch television once a week at least. These people were randomly chosen within South

Korea, because this paper only focuses on receiving information of common Korean people's attitude toward public policy.

To assess the effectiveness of public policy message more sophisticatedly, this study's survey questionnaire also includes three types of public policy related messages; i) print advertisement, ii) TV advertisement (a direct way of exposure), and iii) PPL (a non-direct way of exposure). These three types of public policy advertisements were appropriately selected based on hypothesis. These three types of advertisements were exposed to the respondents during the survey to measure perception of public policy advertisements. For each type of advertisements, respondents are asked the effectiveness and persuasiveness (i.e., their perception: positive or negative) to explore that the effects of 'attitude estimates' on 'differential attitudes' and 'estimates of subjective norms' on 'differential subjective norm' would differ based on perception of the messages, especially regarding three representative types of messages, print, direct TV, and non-direct TV advertisements.. To analyze the relationships between estimate attitudes and differential attitudes and subjective norms and differential subjective norm, measurement items for both pairs are mostly identified.

Those measurement items were developed for this research and went through factor analysis and reliability test. In addition, to analyze the proposed hypotheses, the linear regression analysis, Analysis of Co-Variance (ANCOVA) and Analysis of Variance (ANOVA) were conducted using SPSS. For factor analysis, the extraction method and Varimax rotation methods with Kaiser Normalization are used and the most relevant data emerged (i.e. six factors for each item: estimate attitudes, subjective norms, differential attitudes, differential subjective norm, intentions and behavioral change). Factor scores and factor coefficient from factor analysis were used for regression analyses. Those six factors are identified as the factors with an eigen value greater than one. This study shows the results of factor analysis, regression analysis and ANOVA for main hypothesis testing (i.e., H1, H2, H3,

H4, and H5), while for testing H1a-c and H2a-c, ANCOVA is applied and its covariate is the audiences' perception of public policy messages, positive or negative. In regards with each public policy messages, the respondents were asked their preference with 7 point liker scale (i.e. "1" refers to dislike extremely and "7" is like extremely) after seeing each public policy message. To apply ANCOVA, the data measuring the audiences' preference is recoded from 1 to 3 as negative (e.g., '-1'), 4 as not available or neutral (e.g., '0'), and from 5 to 7 as positive (e.g., '1').

V. Data Analysis

Data from the qualitative research was qualitatively examined and data from quantitative research was statistically analyzed to test hypotheses. In addition, advertising awareness is explored through the questionnaire.

5.1 Findings from Qualitative Research

A woman has experienced seeing different types of public policy advertisement. The respondent saw an environmental message of saving the earth at the beginning of the film in the theater. She did not recognize the message in question was the public policy message, but it was impressive because saving the earth seemed to her as a subjective norm. In addition, the respondent also saw other public policy messages. To specify the discussion, some examples are selected. She saw print advertisement, TV advertisement, and PPL of new address system (a kind of administration policy). The print ads and TV ads did not inspire her to follow the policy, but PPL did. She did well perceive the information and had intention to follow. After seeing PPL addressing new address system in a variety show, she felt the new system is more effective and easier way to find unfamiliar building. The PPL showed more detail and real situation when people adopt and follow that policy so that she came to know positive aspects of following public policy in detail during watching the message That

is, showing the way to apply and its consequences are more effective and impressive than just providing images and offering the way to do. This is an example of *Modeling in Observational Learning*. Solomon (2009) argued in his book that modeling is the process of imitating the behavior of others. In this context, the more detailed ads show, the more effective and impressive. This interview led to find out research question that individual perception of public policy messages differs based on types of the messages.

Another respondent could not recall any public policy related message. However, after getting information on public policy messages, he can remember some part of the program. He also answered that PPL is more persuasive than TV ads, even though he did not noticed the program advertised public policy. In fact, he does not watch the television with sitting in his house. Instead, he selected the program to watch and skipped the advertisements. In other words, he saw the public policy messages only when the messages indirectly advertised in a format of PPL. The respondent thought that it did not advertised public policy and it issued reasonable fact. This interview also led to find out research question that individual perception of public policy messages differs based on types of the messages.

5.2 Findings from Quantitative Research

5.2.1 Demographic Information

All the participants are Korean. Of the 197 participants, approximately 62.9 % were male, 37.1 % were female. Around 51 % are single, 49 % are married. Approximately, 46.9 % of participants' current or final education background was bachelor degree, 39.2 % of participants' current or final education background was master degree, 6.2 % of participants' current or final education background was high school and 4.1 % of participants have associate degree. 3.6 % of respondents have Ph.D. Among 197 participants, 170 responded to the question asking annual household income. Approximately, 9.4 % answered annual

household income of KRW 19,990,000 or under, 32.4 % between KRW 20,000,000 and 39,990,000, 27.1 % between KRW 40,000,000 and 59,990,000, 14.1 % between KRW 60,000,000 and 79,990,000, 7.1 % between KRW 80,000,000 and 99,990,000, 10 % more than KRW 100,000,000.

Approximately, 35.4 % of respondents were in the 20-29 age group, 29.2 % were between 30-39, 28.1 % were between 40-49, 7.3 % were between 50-59, and five respondents didn't answer. Around 49.5 % were businessmen, 18.6 % were government officers, 13.4% were each students and professionals, 2.1 % were each housewives and others, and 1 % were nonprofit organization worker.

5.2.2 Reliability Test: Cronbach Alpha

In order to test reliability for each item of the proposed model, this paper employs cronbach alpha as a reliability coefficients (See table 3). To measure 'attitude estimates', 10 questions were asked and its alpha is .9041(5 questions for component 1 have .8720 and 5 questions for component 2 have .8426). That means all of the questions to ask attitude estimates in the survey have consistency. To ask 'estimates of subjective norm', 5 questions are used and its alpha is .8569. Those questions also have consistency. 11 questions were asked to measure 'differential attitude' and its reliability coefficient alpha is .9470. These 11 questions have a good consistency. For 'differential subjective norm', 5 questions were used and its alpha is .8774. In addition, 5 questions to ask 'differential intention' toward public policy have .8496 as its cronbach alpha. Both of them present that those questions respectively for 'differential subjective norm' and 'differential intention' have an internal consistence. For the last item of behavioral change, 5 questions were asked and its alpha is .8420. This also has consistency.

In short, all of the questions were appropriately asked to measure each item and the data from the survey can be used for statistical analysis (see table 3).

Table 3. Reliability Coefficients

Items	Reliability Coefficients
1. Factor for Attitude Estimates	**0.9041**
1.1. Component 1 for Attitude Estimates (5 questions)	**0.8720**
1.2. Component 2 for Attitude Estimates (5 questions)	**0.8426**
2. Factor for Differential Attitude (11 questions)	**0.9470**
3. Factor for Estimates of Subjective norm (5 questions)	**0.8569**
4. Factor for Differential Subjective norm (5 questions)	**0.8774**
5. Factor for Differential Intention (5 questions)	**0.8496**
6. Factor for Behavioral Change (5 questions)	**0.8420**

5.2.3   Factor Analyses

Factor analysis is performed on the 44 variables in six categories. In the process, three variables are excluded from the analysis due to their low communalities. Thus, 41 items are used to obtain the final six factor solution using the principal component analysis with the varimax rotation. For 'attitude estimates', two components are extracted so each component is treated as a factor for attitude estimates in the model.

In a nutshell, six factors came out to be i) attitude estimates-two components ii) differential attitude toward public policy message; iii) estimates of subjective norm concerning public policy message; iv) differential subjective norm: attitude toward public policy message; v) differential intention to follow public policy; and vi) behavioral change to follow public policy (See table 4).

Table 4. Factor Loadings

Items	Factor Loadings
1. Factor for Attitude Estimates*	
1.1. Component 1 for Attitude Estimates	
I would have better life if I comply with public policy.	0.860
I would enjoy more convenient life if I support for public policy.	0.858
If I follow public policy(e.g. environmental policy-energy saving), quality of my life will be bette...	0.795
Overall, I tend to believe what public policy related messages addressed.	0.625
Public policy related messages are pleasant and favorable.	0.521
1.2. Component 2 for Attitude Estimates	
I am willing to reduce energy consumption due to public policy related messages such as environment...	0.833
I think public policy related messages(e.g. energy saving) are effective and persuasive.	0.799
I tend to pay attention to public policy related messages.	0.723
I think the contents of public policy related messages are informative and believable.	0.629
I often recall public policy related messages from sources, such as TV, printed poster, etc.	0.557
2. Factor for Differential Attitude	
I think that quality of my life will be improved when I follow (or listen) public policy messages(e....	0.874
I feel that I need to reduce or moderate my energy consumption by seeing those environmental policy...	0.872
After I see public policy related advertisements, I think I would have better life if I comply with...	0.866
After I see public policy related advertisements, I would enjoy more convenient life if I support fo...	0.866
I think public policy related advertisement is informative and believable.	0.815
Public policy related advertisements alarm me to reduce or moderate energy consumption.	0.814
I think an public policy related message is effective tool to inform people of public policy.	0.809
Environmental policy related messages alarm me that my reduction or moderation toward energy consump...	0.798
As the voice of Public policy related advertisements is more specific, I tend to follow the public p...	0.765
Now, I think that public policy related messages affect to change my habit.	0.763
Now, I can recall other public policy related messages that I saw past.	0.683

3. Factor for Estimates of Subjective norm

If most people who are important to me have an energy moderation attitude, I think I can more easily...	0.854
I think that I should reduce or moderate my energy consumption attitude when I see public policy rel...	0.831
If most people who are important to me decide to reduce or moderate their energy consumption, I woul...	0.793
I tend to listen when public policy related messages(e.g. environmental policy advertisement) alarm...	0.779
I, sometimes, think to reduce or moderate my energy consumption attitude when I think of norm (e.g....	0.746

4. Factor for Differential Subjective norm

I think that public policy related messages(e.g. environmental policy) strengthen my subjective norm...	0.894
After I perceive environmental policy related messages(e.g. response to climate change), at least, I...	0.838
If my family members or relatives have a positive attitude toward environmental policy related messa...	0.813
I think that many people who are important to me want to reduce or moderate energy consumption behav...	0.803
I, sometimes, feel guilty when I waste energy, because of environmental policy messages that...	0.763

5. Factor for Differential Intention

I'm willingness to switch my energy consumption attitude by seeing those carbon-usage warning (moder...	0.890
Sometimes, environmental warning (moderation) messages give me reaction to use energy less.	0.864
I tend to save the energy due to many reasons such as environmental concern.	0.773
I intend to reduce or moderate energy consumption attitude.	0.729
Overall, I tend to believe what public policy related messages addressed.	0.693

6. Factor for Behavioral Change

I'll start to reduce or moderate carbon-usage attitude.	0.877
I have a plan to start reducing (moderating) energy consumption attitude soon.	0.867
I plan to pay attention not to waste energy	0.852
Above public policy related messages positively affect to switch my usual behavior.	0.721
I have a plan to hang out with people who don't waste energy much after seeing environmental policy...	0.699

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

*Rotation converged in 3 iterations.

5.2.4 Hypothesis Test

This study has the five main hypotheses and the 8 additional hypotheses to test. Figure 9 shows those hypotheses flow.
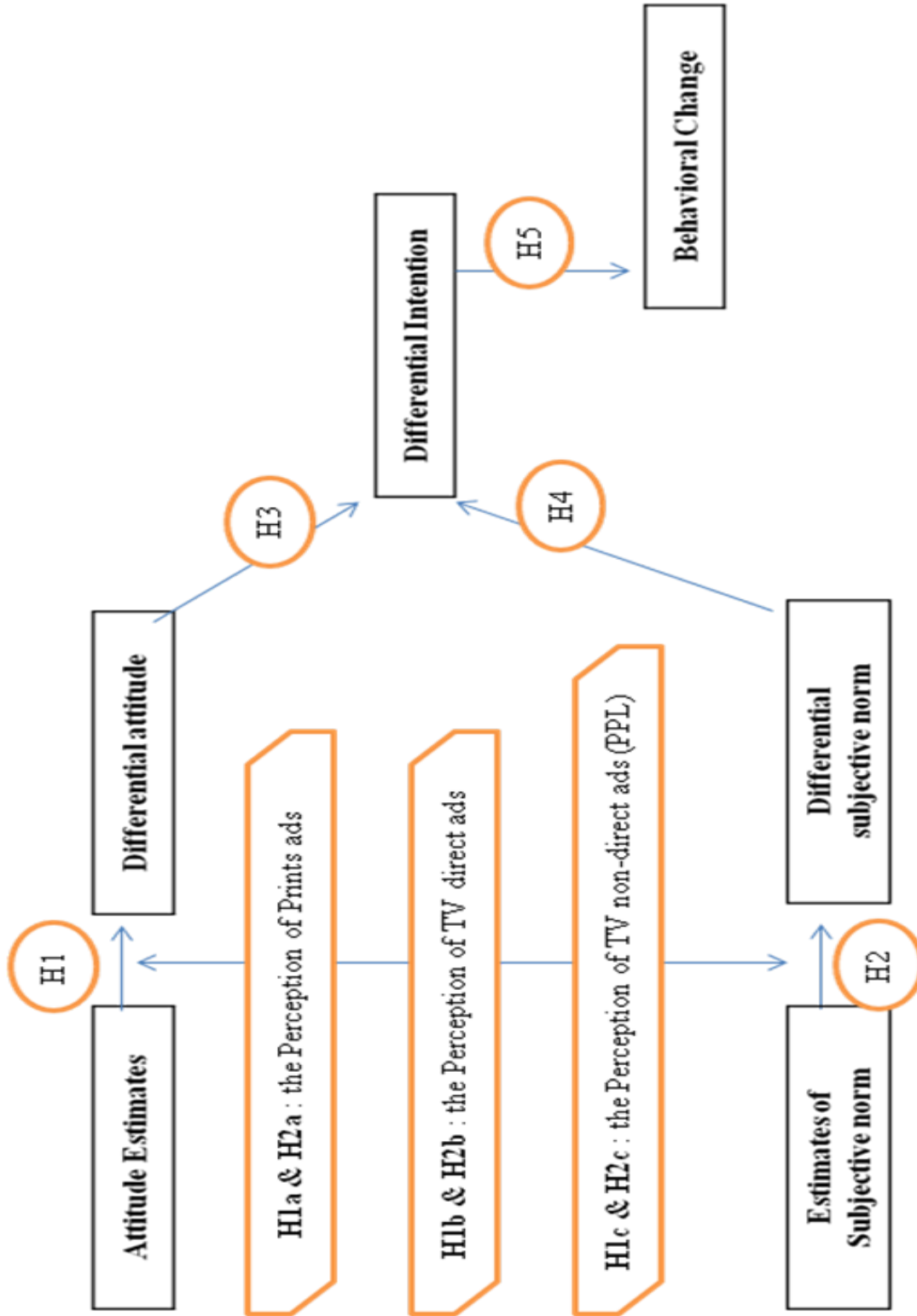
Figure 9. Hypotheses Flow

The diagram contains the following labeled elements:

- Behavioral Change
- Differential Intention
- H5
- H3
- H4
- Differential attitude
- Differential subjective norm
- Attitude Estimates
- Estimates of Subjective norm
- H1
- H2
- H1a & H2a : the Perception of Prints ads
- H1b & H2b : the Perception of TV direct ads
- H1c & H2c : the Perception of TV non-direct ads (PPL)

H1: 'Attitude estimates' concerning public policy such as behavioral beliefs and evaluations affect 'differential attitudes' after perceiving public policy messages.

Based on factor coefficients from factor analysis, regression analysis was conducted, as Table 5 shows. For proving hypothesis 1, two components are used each as a factor of attitude estimates. The results of the regression analysis found that p-value is almost 0 (r-square = .242 for the first component and the second component is .343) for the effects of attitude estimates on differential attitude toward public policy message. Results indicated that this result is statistically significant ($p < .01$, f-value (1,160) = 51.015 for component 1 and 83.667 for component 2) and alternative hypothesis of H1 was well accepted.

Table 5. Regression Analysis to Estimate the Effects of Attitude Estimates on Differential Attitude

Variable	R	R Square	Adjusted R Square	Standardized Coefficients*	t-value(Sig)
REGR factor score 1 for Attitude Estimates	0.492	0.242	0.237	0.492	7.142**
REGR factor score 2 for Attitude Estimates	0.586	0.343	0.339	0.586	9.147**

*Dependent Variable: REGR factor score for Differential Attitude
**Significant at 0.01 level (2-tailed).

H1a: The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of prints ads, positive vs. negative.

As Table 6 shows, the results of ANCOVA found $p = .000$ (f-value (2, 158) = 29.955 for component 1 and 24.791 for component 2) that the relationship between attitude estimates and differential attitudes differs based on perception of print ads, positive or negative. Findings indicated $p < .01$, therefore, alternative hypotheses H1a was accepted.

Table 6. Analysis of Co-Variance for Differential Attitudes by Perception of Print ads

Variable	R Squared	Adjusted R Squared	df	Mean Square	f-value(Sig)
Factor score 1 for Attitude Estimates	0.450	0.440	2	16.802	29.955**
Factor score 2 for Attitude Estimates	0.500	0.491	2	12.641	24.791**

*Dependent Variable: REGR factor score for Differential Attitude

**Significant at 0.01 level.

H1b: The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of direct TV ads, positive vs. negative.

As Table 7 shows, the results of ANCOVA found $p = .000$ (f-value $(2, 158) = 16.768$ for component 1 and 21.819. for component 2) that the relationship between attitude estimates and differential attitudes differs based on perception of TV direct ads, positive or negative. Findings indicated $p < .01$, therefore, alternative hypotheses H1b was accepted.

Table 7. Analysis of Co-Variance for Differential Attitudes by Perception of Direct TV Ads

Variable	R Squared	Adjusted R Squared	df	Mean Square	f-value(Sig)
Factor score 1 for Attitude Estimates	0.375	0.363	2	10.700	16.768**
Factor score 2 for Attitude Estimates	0.485	0.476	2	11.454	21.819**

*Dependent Variable: REGR factor score for Differential Attitude

**Significant at 0.01 level.

H1c: The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of indirect TV ads(e.g., PPL), positive vs. negative.

As Table 8 shows, the results of ANCOVA found $p = .000$ (f-value $(2, 158) = 11.468$ for component 1 and 7.847. for component 2) that the relationship between attitude estimates and

differential attitudes differs based on perception of TV non-direct ads (PPL), positive or negative. Findings indicated $p < .01$, therefore, alternative hypotheses H1c was accepted.

Table 8. Analysis of Co-Variance for Differential Attitudes by Perception of Indirect TV Ads

Variable	R Squared	Adjusted R Squared	df	Mean Square	f-value(Sig)
Factor score 1 for Attitude Estimates	0.338	0.325	2	7.747	11.468**
Factor score 2 for Attitude Estimates	0.403	0.391	2	4.782	7.847**

*Dependent Variable: REGR factor score for Differential Attitude
**Significant at 0.01 level.

H2: 'Estimates of subjective norms' concerning public policy such as normative beliefs and motivations to comply affect 'differential subjective norm' after perceiving public policy messages.

Table 9 shows the result of regression analysis based on factor scores from factor analyses of estimates of subjective norm concerning public policy such as normative beliefs and motivations, and of differential subjective (i.e., attitude toward public policy messages based on subjective norm) after perceiving public policy messages. The result found $p = .000$ (r-square = .458) for the effects of estimates of subjective norm on differential subjective norm. Findings indicated $p < .01$ (f-value (1,179) = 151.368), therefore, alternative hypotheses 2 was accepted.

Table 9. Regression Analysis to Estimate the Effects of Estimates of Subjective Norms on Differential Subjective Norm

Variable	R	R Square	Adjusted R Square	Standardized Coefficients*	t-value(Sig)
REGR factor score for Estimates of Subjective norm	0.677	0.458	0.455	0.677	12.303**

*Dependent Variable: REGR factor score for Differential Subjective norm
**Significant at 0.01 level (2-tailed).

H2a: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of prints ads, positive vs. negative.

As Table 10 shows, the results of ANCOVA found $p = .000$ (f-value (2, 177) = 10.313) for the relationship between estimates of subjective norms and differential subjective norm based on perception of pints ads, positive vs. negative. Findings indicated $p < .01$, therefore, alternative hypotheses H2a was accepted.

H2b: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of direct TV ads, positive vs. negative.

As Table 10 shows, the results of ANCOVA found $p = .000$ (f-value (2, 177) = 5.055) for the relationship between estimates of subjective norms and differential subjective norm based on perception of TV direct ads, positive vs. negative. Findings indicated $p < .01$, therefore, alternative hypotheses H2b was accepted.

H2c: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of indirect TV ads (e.g., PPL), positive vs. negative.

As Table 10 shows, the results of ANCOVA found $p = .000$ (f-value (2, 177) = 5.260) for the relationship between estimates of subjective norms and differential subjective norm based on perception of TV non-direct ads(PPL), positive vs. negative. Findings indicated $p < .01$, therefore, alternative hypotheses H2c was accepted.

Table 10. Analysis of Co-Variance for Differential Subjective Norm by Perception of Public Policy Messages

Sources	R Squared	Adjusted R Squared	df	Mean Square	f-value(Sig)
Perception of Print Ads	0.515	0.507	2	5.167	10.313**
Perception of Direct TV Ads	0.487	0.479	2	2.675	5.055**
Perception of Indirect TV Ads (e.g., PPL)	0.489	0.480	2	2.777	5.260**

*Dependent Variable: REGR factor score for Differential Subjective norm
**Significant at 0.01 level.

H3: 'Differential attitudes' toward public policy affect 'differential intention' to switch attitude to public policy.

Based on factor coefficients from factor analysis of differential attitude and differential intention, regression analysis was conducted (see table 11). The results of the regression analysis found $p = .000$ (r-square = .569) for the effects of differential attitude toward public policy on differential intention to switch attitude to public policy. Results showed $p < .01$ (f-value $(1,168) = 221.508$), therefore, alternative hypotheses for H3 was accepted.

Table 11. Regression Analysis for Differential Attitude Toward Public Policy Messages on Differential Intention to Follow Public Policy

Variable	R	R Square	Adjusted R Square	Standardized Coefficients*	t-value(Sig)
REGR factor score for Differential Attitude	0.754	0.569	0.566	0.754	14.883**

*Dependent Variable: REGR factor score for Differential Intention.
**Significant at 0.01 level (2-tailed).

H4: 'Differential subjective norm' affect 'differential intention' to switch attitude to public policy.

As table 12 shows, the results of the regression analysis found $p = .000$ (r-square = .586) for the effects of differential subjective (i.e., attitude toward public policy messages

based on subjective norm) on differential intention switch attitude to public policy. Results

showed $p < .01$ (f-value (1,183) = 258.592), thus, alternative hypotheses 4 was accepted.

Table 12. Regression Analysis for the Effects of Differential Subjective Norm on Differential Intention to Follow the Policy

Variable	R	R Square	Adjusted R Square	Standardized Coefficients*	t-value(Sig)
REGR factor score for Differential Subjective norm	0.765	0.586	0.583	0.765	16.081**

*Dependent Variable: REGR factor score for Differential Intention.
**Significant at 0.01 level (2-tailed).

H5: 'Differential intention' to switch attitude to public policy affects 'behavioral change' to follow the policy.

Table 13 is the result of the regression analysis based on factor coefficients from factor

analysis of differential intention and behavioral change. It found $p = .000$ (r-square = .728)

for the effects of differential intention' to switch attitude to public policy on behavioral

change to follow the policy. Results showed $p < .01$ (f-value (1,179) = 480.120), therefore,

alternative hypotheses 5 was accepted.

Table 13. Regression Analysis for the Effects of Intention to Switch Attitude toward Public Policy on Behavioral Change to Follow Public Policy

Variable	R	R Square	Adjusted R Square	Standardized Coefficients*	t-value(Sig)
REGR factor score for Differential Intention	0.853	0.728	0.727	0.853	21.912**

*Dependent Variable: REGR factor score for Behavioral Change.
**Significant at 0.01 level (2-tailed).

In conclusion, 5 main hypotheses and 6 additional hypotheses are all accepted and

statistically significant as summarized in table 14.

Table 14. Summary of the Hypotheses Testing Results

H1: 'Attitude estimates' concerning public policy such as behavioral beliefs and evaluations affect 'differential attitudes' after perceiving public policy messages.	Accepted
H1a: The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of prints ads, positive vs. negative.	Accepted
H1b: The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of direct TV ads, positive vs. negative.	Accepted
H1c: The effect of 'attitude estimates' on 'differential attitudes' differs based on perception of indirect TV ads (e.g., PPL), positive vs. negative.	Accepted
H2: 'Estimates of subjective norms' concerning public policy such as normative beliefs and motivations to comply affect 'differential subjective norm' (i.e., attitude toward public policy messages based on subjective norm) after perceiving public policy messages.	Accepted
H2a: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of pints ads, positive vs. negative.	Accepted
H2b: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of direct TV ads, positive vs. negative.	Accepted
H2c: The effect of 'Estimates of subjective norms' on 'differential subjective norm' differs based on perception of indirect TV ads (e.g., PPL), positive vs. negative.	Accepted
H3: 'Differential attitudes' toward public policy affect 'differential intention' to switch attitude to public policy.	Accepted
H4: 'Differential subjective norm' affect 'differential intention' to switch attitude to public policy.	Accepted
H5: 'Differential intention' to switch attitude to public policy affects 'behavioral change' to follow the policy.	Accepted

5.2.5 Other findings

About 70.6 % of the participants have experience to see any public policy message (e.g. saving the energy, new address system, etc.) from integrated communication tools such as TV program, public ads, magazines, internet, etc. Among them, 74.6 % chose the TV advertising as the most memorable message, 12.3 % answered it was print ads, and 6.5 % and 3.6% picked variety show and soap opera respectively. While 10.4 % of those who negatively perceived public policy message information likely believe the contents of advertising (10 out of 96), 69.6 % of those who positively perceived public policy message information likely believe the contents of advertising (48 out of 69) as table 15 shows.

Table 15. Cross Tabulation of Perception and Beliefs of Advertising

		Overall, how likely do you believe contents of advertising?			
		unlikely believe	Neutral	likely believe	Total
Overall, how likely do you perceive public policy message information as advertised?	Negatively perceived	75	11	10	96
	Neutral	9	5	18	32
	Positively perceived	15	6	48	69
	Total	99	22	76	197

VI. CONCLUSION

This study measures effects of public policy related messages on conditional principles by applying the extended Fishbein model (1980). With the consideration of the modified extended Fishbein model, this study measured the relationships i) how attitudes estimates affect differential attitudes; ii) how estimates of subjective norm affect differential subjective norm; iii) how differential attitude and subjective norm affect differential intention; and iv) how differential intention affect behavioral change. In particular, this study measure effects of conditional principles including effects of i) print ads; ii) direct TV ads; and iii) indirect TV ads (i.e., Product placement).

In order to prove the hypotheses, this study applied statistical analyses such as factor analysis, Analysis of Co-Variance (ANCOVA), Analysis of Variance (ANOVA), and regression analyses. The results of the study found that proposed effects are all statistically significant.

This study provides both managerial and theoretical implications. Theoretically, this study applied and developed the theory, entitled "extended Fishbein Model" for analyzing the effectiveness of public policy messages to attitudes and behavioral changes. Further, this study also applied the conditional principles from extended Fishbein Model for exploring the differences of the effects of attitude estimates on differential attitudes and the effects of subjective norm estimates on differential subjective norm on a basis of types of advertising: print and TV ads. This study also provides managerial implications by providing what affects to the attitude and behavioral relationships in the case of adopting public policy messages. The messages in nonprofit and social organizations can be dealt with by marketing and advertising theories.

The study has limitations. This study could be extended by increasing the sample size to enhance generalizability. This study is only focusing on the relations of the variables, thus it should also consider cause-and-effect relationships by applying statistical programs, such as Lisrel. In addition, other conditional principles could be applied besides TV and print ads so that the study could be applied to various cases.

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APPENDICES

Appendix

Survey Questionnaire

Thank you for your kind participation. This survey asks your opinion about public policy message in media. Please take 10 minutes to answer the following questions. We are assured that the data you give will be strictly confidential, and no one would know how you answer. Since our survey is not a test, there is no right or wrong answer, and your participation in this survey is voluntary. The sole purpose of this work is academic research purpose only. No individual or organization will be related with any research analysis or reports connected to the survey data. Samples will be selected from the people, who watch TV in South Korea. For better survey, your sincere responses shall be highly appreciated. If you have any questions, please do not hesitate to contact 010-5030-4095 or bichwi@gmail.com. Your contribution is very important to explore public policy messages on conditional principles and predicting social behavior. Thank you.

- ✓ **A "public policy message" is defined as any type of advertising on public policy.**
- ✓ **A "Product Placement (PPL)" is defined as an advertising method which public policy is indirectly revealed in reality show and soap opera**

Please read carefully and check(v) on the appropriate blanks

Warm-up questions ; **Awareness/Exposure level of public policy messages**

1. How often do you watch television? (Select one)

   Very rarely ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Very often

2. Have you ever seen any public policy message(e.g. saving the energy, new address system, etc.) from integrated communication tools such as TV program, public ads, magazines, internet, etc? (Select one)

   ☐ Yes   ☐ No (go direct **Attitude Estimates**)

3. How much do you think that you were exposed by public policy message from integrated communication tools? (Select one)

   None ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ A lot

4. How frequently do you receive any kind of public policy message from integrated communication tools such as advertisements? (Select one)

   Very rarely ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Very often

5. How likely do you perceive public policy messages(e.g. saving the energy, new address system, etc.)

   Not at all perceived ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Well perceived

6. Overall, how frequently do you receive any kind of public policy messages? (Select one for each method, N/A refers to 'Not Applicable')

   A. Print advertising

   ☐ N/A or Very rarely ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Very often

   B. TV advertising

□ N/A or Very rarely ◄ □1 □2 □3 □4 □5 □6 □7 ► Very often

   C. Soap Opera

      □ N/A or Very rarely ◄ □1 □2 □3 □4 □5 □6 □7 ► Very often

   D. Variety show

      □ N/A or Very rarely ◄ □1 □2 □3 □4 □5 □6 □7 ► Very often

7. Overall, where is the most memorable thing that you saw the messages (Select one)
   □ Print advertising   □ TV advertising □ Soap Opera □ Variety show □ Others _____

8. Overall, how likely do you perceive public policy message information as advertised?
   Not at all perceived ◄ □1 □2 □3 □4 □5 □6 □7 ► Well perceived

9. Overall, how likely do you believe contents of advertising?
   Very unlikely ◄ □1 □2 □3 □4 □5 □6 □7 ► Very likely

Attitude Estimates

1. I would have better life if I comply with public policy.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

2. If I follow public policy (e.g. environmental policy-energy saving), quality of my life will be better.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

3. I would enjoy more convenient life if I support for public policy.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

4. I often recall public policy related messages from sources, such as TV, printed poster, etc etc.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

5. I tend to pay attention to public policy related messages.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

6. I don't think that public policy related messages affect to change my daily lifestyle. (back-code)
   Strongly disagree ◄ □7 □6 □5 □4 □3 □2 □1 ► Strongly agree

7. I am willing to reduce energy consumption due to public policy related messages such as environmental policy.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

8. I think public policy related messages(e.g. energy saving) are effective and persuasive.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

9. I think the contents of public policy related messages(e.g. new address system) are informative and believable.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

10. Public policy related messages are pleasant and favorable.

Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

11. Overall, I tend to believe what public policy related messages addressed

Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

1. I tend to do what my important others (such as family members) think I should do.

Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

2. I tend to listen when public policy related messages(e.g. environmental policy advertisement) alarm me what I should do.

Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

3. I think that I should reduce or moderate my energy consumption attitude when I see public policy related messages(e.g. energy saving, climate change related issues).

Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

4. I, sometimes, think to reduce or moderate my energy consumption attitude when I think of norm (e.g. value from my religion, family, others).

Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

5. If most people who are important to me decide to reduce or moderate their energy consumption, I would support their decision.

Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

6. If most people who are important to me have an energy moderation attitude, I think I can more easily reduce or moderate my energy consumption attitude.

Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

[After Exposed by Examples of Public Policy Related Messages]

Answer the following questions based on your feeling after you saw public policy related messages

Figure 1. Examples of Direct advertising - Print Advertising (public policy related messages)

- Please answer the questions after seeing this figure below

1. How likely do you perceive information of each figure?
   Not at all perceived ◀ □1 □2 □3 □4 □5 □6 □7 ▶ Well perceived

2. How much do you like each figure?
   Dislike Extremely ◀ □1 □2 □3 □4 □5 □6 □7 ▶ Like Extremely

3. How much do you agree that this figure is effective or persuasive?
   Strongly disagree ◀ □1 □2 □3 □4 □5 □6 □7 ▶ Strongly agree

Figure 2. Examples of Direct Advertising – TV advertising (public policy related messages)

- Please answer the questions after seeing this figure below

4. How likely do you perceive information of each figure?
    Not at all perceived ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Well perceived

5. How much do you like each figure?
    Dislike Extremely ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Like Extremely

6. How much do you agree that this figure is effective or persuasive?
    Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

Figure 3. Examples of Indirect Advertising –PPL (public policy related messages)

- Please answer the questions after seeing this figure below.

In the Variety show titled "unlimited challenge", effect of climate change and global warming scenarios showed. The show alerted people to save the earth.

7. How likely do you perceive information of each figure?
    Not at all perceived ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Well perceived

8. How much do you like each figure?
    Dislike Extremely ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Like Extremely

9. How much do you agree that this figure is effective or persuasive?
    Strongly disagree ◀ ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ▶ Strongly agree

10. Overall, How likely do you perceive information of each figure?

   Not at all perceived ◄ □1 □2 □3 □4 □5 □6 □7 ► Well perceived

11. Overall, How much do you like each figure?

   Dislike Extremely ◄ □1 □2 □3 □4 □5 □6 □7 ► Like Extremely

12. Overall, How much do you agree that these figures are effective or persuasive?

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

[Differential Attitude (Attitude toward public policy related messages)]

Answer the following questions based on your feeling after you saw public policy related messages.

1. After I see public policy related advertisements, I think I would have better life if I comply with public policy.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

2. After I see public policy related advertisements, I would enjoy more convenient life if I support for public policy.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

3. Public policy related advertisements alarm me to reduce or moderate energy consumption

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

4. As the voice of Public policy related advertisements is more specific, I tend to follow the public policy

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

5. Now, I can recall other public policy related messages that I saw past.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

6. Now, I think that public policy related messages affect to change my habit

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

7. I feel that I need to reduce or moderate my energy consumption by seeing those environmental policy related messages.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

8. I think a public policy related message is effective tool to inform people of public policy.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

9. I think public policy related advertisement is informative and believable.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

10. Environmental policy related messages alarm me that my reduction or moderation toward energy consumption attitude is important to improve the earth's condition.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

11. I think that quality of my life will be improved when I follow (or listen) public policy messages (e.g. environmental policy).

Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

[Differential Subjective Norm (Attitude toward public policy related messages)]

Answer the following questions based on your feeling after you saw public policy advertisements.

1. I, sometimes, feel guilty when I waste energy, because of environmental policy messages that address family related issues.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

2. I, sometimes, feel uncomfortable seeing public policy related messages (e.g. environmental policy) with my family members or relatives

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

3. I think that many people who are important to me want to reduce or moderate energy consumption behavior partly because of environmental policy related messages.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

4. I think that public policy related messages (e.g. environmental policy) strengthen my subjective norm toward energy saving attitude (e.g. value from my religion, family, others).

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

5. If my family members or relatives have a positive attitude toward environmental policy related messages, I think that I also would have a positive attitude toward environmental policy related messages.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

6. After I perceive environmental policy related messages (e.g. response to climate change), at least, I consider to reduce or moderate my energy consumption not only for myself but also for social obligatory.

   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

Differential Intention

Answer the following questions based on your feeling after you saw public policy advertisements.

1. I intend to reduce or moderate energy consumption attitude.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

2. Sometimes, environmental warning (moderation) messages give me reaction to use energy less.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

3. I tend to save the energy due to many reasons such as environmental concern.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

4. I'm willingness to switch my energy consumption attitude by seeing those carbon-usage warning (moderation) advertisements and messages.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

5. Overall, I tend to believe what public policy related messages addressed.
   Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

Behavioral Change

Answer the following questions based on your feeling after you saw public policy related advertisements.

1. I have a plan to start reducing (moderating) energy consumption attitude soon.
    Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

2. I plan to pay attention not to waste energy.
    Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

3. I'll start to reduce or moderate carbon-usage attitude.
    Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

4. I have a plan to hang out with people who don't waste energy much after seeing environmental policy related messages.
    Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

5. Above public policy related messages positively affect to switch my usual behavior.
    Strongly disagree ◄ □1 □2 □3 □4 □5 □6 □7 ► Strongly agree

Demographic Information

1. What is your gender? (Select one) □ Male   □ Female

2. What is your nationality? □ Korean   □ Others _____

3. What is your current age? (Korean age basis) (Select one)
    □ under 20   □ 20 to 29   □ 30 to 39   □ 40 to 49   □ 50 or 59   □ 60 or more

4. What is your current or final education background? (Select one)
    □ High school   □Associate degree   □ Bachelor degree   □ Master degree □ PhD

5. What is your current occupation?(Select one)
    □ Student   □ Businessman   □ Professionals   □ Non-profit organization worker
    □ Government officers   □ Housewife   □ Others _____

6. What is your annual household income? (Optional: If you are unwilling to answer this question, please just skip this)
    □ Less than 19,990,000 KRW   □ 20,000,000 ~ 39,990,000 KRW
    □ 40,000,000 ~ 59,990,000 KRW   □ 60,000,000 ~ 79,990,000 KRW
    □ 80,000,000 ~ 99,990,000 KRW   □ More than 100,000,000 KRW

7. What is your current marital status? (Select one) □ Single (Please stop here)   □ Married

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Thank you for your kind cooperation!