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A Study of Green Claims in Korean Consumer Market[†]

Consumer perception of the meaning of 'green' and 'green products' as well as how they use green claims (including terms, certifications, and marks) should be examined to help consumers pursue green behavior in everyday life. This study investigates what type of green claims prevail in the Korean consumer market and how consumers perceive the meaning of 'green' and green claims. For these purposes, media analysis, in-context research (shop visit) and a survey were conducted to collect green claims (including green terms and certified/noncertified green marks). Green claims in the consumer market were first summarized and analyzed; subsequently, the most frequently used 7 green marks and 15 green terms were selected to construct a consumer survey questionnaire on consumer perceptions of green claims. An online survey was performed via Embrain and the survey

respondents consisted of 500 adult consumers over the age of 20. The field research results showed frequent green claims in the Korean consumer market. However, certified (and hence trustworthy green product information labels) were uncommon in the market. The only green claim widely known and used by consumers was the energy consumption efficiency label. Consumers were interested in the green information label not because it affected their utility cost nor because it was important for environment protection.

Increased concerns for the natural environment exist at most levels of an industrialized global society. These concerns have led to a considerable increase in Green Growth and green consumption. In 2008, the Korean government embraced a vision of 'Low Carbon, Green Growth' as the core of the national new vision. The core of Green Growth is to minimize environmental degradation, climate change, and protect natural resources as well as enable new growth opportunities through environmentally conscious ventures. To achieve green growth, it is crucial to change development approaches from a 'grow first, clean up later' to more responsible long-term attitudes. In addition, consumer support is equally imperative to the development of green technology and the reorganization of systematic legal protection. The green consumption lifestyle of a consumer allow to achieve win-win solutions for consumers, business, and the government sector.

The Korean government has encouraged green consumption in many ways; however, the level of

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consumer green consumption behavior is not yet high (Korea Chamber of Commerce and Industry, 2008; Bae, 2009; Back, 2010; Hwang, 2008). According to research by the Korea Chamber of Commerce and Industry (2008), Korean consumers had a willingness toward green consumption; however, they did not make a conscious effort towards this lifestyle. The main barriers to green product consumption, pointed out by consumers were the lack of diversity, low-quality, and high-price of green products. Bae (2009) and Hwang (2008) showed that consumers were confused by greenwashing advertising in market; subsequently, they distrusted green products and did not want to purchase them.

According to Korean Ministry of Environment (2013), green consumption begins with the purchase of essential products that are essential and environmentally-friendly. Environmentally-friendly products are not harmful to human health but conserve power, fuel, and disposal costs. Environmentally-friendly products require minimal amounts of energy during the whole process of production, circulation, consumption, and disposal. However, defining an environmentally-friendly product is complex. In a strict sense, there is no such thing as a truly sustainable or green product; all consumer-products that people buy, own, use and discard have a negative environmental impact at some stage in their life-cycle (Cooper, 2000). Products can be classified according to the scale of impact, and a quality threshold can be drawn (Cooper, 2000); physically, products with a low environmental impact from their manufacturing processes to discharge is regarded as an environmentally sustainable product.

Significant research on green consumption or green product consumption by Korean consumers has a primary focus on economic thrift and post-consumption behaviors such as recycling and energy conservation. These curtailment behaviors include water and energy conservation, car use reduction, recycling and responsible waste disposal (Korea Chamber of Commerce and Industry, 2008; Bae, 2009; Back, 2010; Hwang, 2008). In this conceptualization, consumers might narrow the meaning of green consumption as consumption behavior useful to save money on an individual basis, and the

environmental effect as a secondary meaning. Related research (Bae, 2009; Back, 2010; Hwang, 2008) found that consumers tend to regard green consumption as an uncomfortable event that involves money, effort, and often low-quality product.

Consumer perceptions on the meaning of 'green' and 'green products' and how they use green claims (including terms, certifications, and marks) should be examined in order to enable the consumer pursuit of green behavior in everyday life. However, according to Consumer Focus (2010), consumers are often unable to determine if a product, package, or service possesses the advertised environmental attributes. They are often confused by many environmental claims on labels and packages; subsequently, there is an ongoing parallel gap between positive attitudes and passive consumer practices towards green consumption. This study has two purposes: 1) to find what kinds of green claims prevail in the Korean consumer market, and 2) to examine how consumers perceive the meaning of 'green' and green claims (certified green marks and green terms). The results reveal an effective presentation method and consumer education plan for required consumer information after the purchase of green products through the identification of the status of the label (mark and phrase) of green products and identifies how consumers recognize and utilize green product information.

LITERATURE REVIEW

The Concept of Green Consumption

The green issue has been become an important issue in global society, terms such as 'green', 'eco', 'environment friendly' have been widely used to refer to something good for the environment. However, there is no unique consensus on what is really green or good for the environment. For example, the meaning of 'good' or 'environment' varies by different people and different societies. Based on related research, the term "green consumption" usually covers a range of activities in consumption fields, that includes the purchase of green products, recycling materials, the efficient use

Table 1. *Sub-components of Green Consumption*

Components	Definition
Environment friendly	Greenhouse gas reduction, prohibition of hazardous substances and pollutants release, separate discharge, control of disposables, purchase of recycled/reused products
Green energy	Renewable energy (solar/geothermal/wind/hydrogen energy), fuel cell, Reduction of fossil energy, energy recovery and circulation
Physical safety	No use of harmful substances for human body, safe and qualitative foods, reduction of chemical synthesis, hazard management
Substantiality	Harmony between human and nature, harmony between development and preservation, waste reduction, preservation of farm land

Reference : Yoo *et al.* (2011)

of energy, environmental protection, and the preservation of species (Kye & Kang, 1998; Bae, 2009; Huh, 2009). Sometimes it is defined as the five “R’s”: reduce, reevaluate, reuse, recycle, and rescue.

There is no clear definition in Korea on the concept of green consumption even though the Korean government has organized various laws and regulations such as - ‘*Law of Low carbon green Growth*’ and ‘*Law of Promoting Green Products*’. The contents of green consumption can be inferred by a review of the clauses related to many environment-related laws and regulations enacted to promote the green behavior by consumers and producers. Yoo *et al.* (2011) found that there were 4 sub-components of green consumption after analyzing 23 green-related Korean laws and regulations (Table 1). The result shows that the consumption of organic farm products as well as energy saving-consumption lower the carbon footprint and recycling costs subsequently. It is regarded in the green consumption domain.

Federal Trade Commission (FTC) of U. S. A. and Department for Environment, Food, and Rural Affairs (DEFRA) of England, are famous for their endeavors to promote green consumption; however, they do not provide a clear definition of green consumption. The meaning and range of green consumption are inferred by the categories that they address and regulate. The Green Guides FTC (1992) issued in 1992 was to help marketers ensure that the claims they made regard to green issues were true and substantiated. Marketers have expanded their promotion of the environmental attributes of their products and services because consumers have become increasingly concerned about the environ-

mental impact of the products and services they use. A periodic review of the FTC showed that consumers were confused about environmental claims and could not determine the environmental attributes. The FTC admitted that the ‘qualified general claims of environmental benefits are difficult to interpret and dependent on their context’ under the FTC Act; subsequently, it enforces marketing claims on a case-by-case basis. The guidance they provide were 1) degradable, 2) compostable, 3) recyclable, 4) recycled, 5) ozone-safe and ozone-friendly, 6) free of additives and non-toxic. Claims over the general substantiality, organic/natural, renewable/renewable energy, and carbon-offset are not addressed in Green Guides

The Green Claims Guidance of DEFRA is designed for institutions that produce, sell, market or advertise products (or services) in the UK and for people who make environmental claims about the products. This guidance promotes the use of clear, accurate, and relevant claims on environmental attributes in the market; however, this guidance does not define what is green consumption or a green product but it suggests what environmental terms should be used with the evidence in Annex 5. Example of the environment terms are: compostable, degradable, designed for disassembly, extended life product, recovered energy, recyclable and recycled content, reduced energy consumption, reduced resource use, reduced water consumption, reusable and refillable waste reduction, carbon footprint, carbon neutral, and renewable energy.

Green Consumption and Green Claims

Consumers should know what was green products

and green consumption behavior in order to realize green consumption. First the government should provide accurate and reliable green information that represent the environmental aspect of products or services. In this context, the Korean government has induced eco-friendly consumption patterns by providing environment information about products and services to consumers. In addition, it has introduced and enforced environmental labeling that enables producers to develop and produce products based on eco- friendly patterns.

The International Organization for Standardization classified environment labeling into 3 types and specified the requirements of environment labeling by type included in the ISO 14020 series. Among them, Type II environment labeling (ISO 14021) is the mark or phrase to be attached with the purpose to promote products such as eco-friendly products by producers or retailers. It is certified through a self-declaration on environmental attributes not by third parties, but by producers (or sellers) who take responsibility for the prevention of false and deceptive advertising. Green marketing universally has a positive effect on the creation of an eco-friendly image for enterprises and the growth of sales; therefore, the number of enterprises of an eco-friendly image to products tends to increase. For example, obscure eco-friendly activities that shows an overt eco-friendly policy or image are called greenwashing if they are not eco-friendly or proven. The increase of greenwashing induces consumers to misunderstand and make wrong purchase decisions on green products that show eco-friendly attributes; subsequently, it causes consumer problems. Greenwashing interferes with the right of consumers to receive information and produces cost and the problem of responsibility for reliability (Lee, Hwang,

& Kim, 2010).

The Korean government and many other institutions have developed several types of green product marks in regards to international environment labeling regulations. Table 2 shows some of the representative marks.








Systems related to green consumption practice information include the Environment Mark System (Ministry of Environment and Korea Environmental Industry & Technology Institute), Environmental Declaration of Product (Ministry of Environment), Carbon Labeling System (Ministry of Environment, Korea Environmental Industry & Technology Institute), Energy and Recycling Mark (Energy management corporation and Korean Agency for Technology and Standards).

The Environmental Mark System provides accurate environmental information to consumers about products and encourages companies to develop and produce products based on eco-friendly consumption patterns by labeling products that can produce relatively less pollution during the product life-cycle and conserve resources and energy compared to other products of the same purpose. Ministry of Environment enacted provisions and enforcement regulations on the operation of the Environment Mark System in April 1992. The past environmental mark known as ‘clearer and greener’ was used from April 1992 to July 2004. The new environmental mark (Table 2) has been used since August 2004.

Green Consumption Behavior of Consumers

The Korean government has encouraged green consumption in many ways; however, the level of green consumption behavior by consumers is low (Korea Chamber of Commerce and Industry, 2008;

Table 2. Product Information Labels in Korea

Name	Eco label	Organic Foods label	Environmental declaration products	Carbon labelling	Energy consumption efficiency	Energy saving products	Good recycled products
Year from	1992	1992	2001	2009	1992	1998	1997
Mark							

Bae, 2009; Back, 2010; Hwang, 2008). The Korea Chamber of Commerce and Industry (2008) surveyed 500 adults living in Seoul and found that 85% the respondents practice green consumption; however, only 50% of respondents implemented their philosophy. Consumers in their 50s and 60s participated in green consumption more than other consumers and female and high-income consumers practiced green consumption more than male and low-income consumers, respectively. Bae (2009) researched 1000 homemakers living in 6 metropolitan cities and investigated their attitudes and behaviors toward green consumption. The results showed that the attitude score of respondents was adequate, but the practice score was 50.6 and showed that they did not actively practice green behavior. The score of 50.6 was far lower than the average score of developed countries, which was 71.5. The most well-practiced behaviors were separating waste disposal and the use of insulator.

Next, The barriers to green consumption were examined. The main consumer barriers against the consumption of green products according to the Korea Chamber of Commerce and Industry (2008) were the lack of diversity, low quality and high price of green products, and distrust of green products. Bae (2009) also examined similar barriers such as distrust of green products, high price, lack of time to browse green products, no support by family members, and lack of diversity. The Boston Consulting Group summarized 8 reasons why people did not choose green products very well (Moon, 2010). They were 'not relevant for my needs,' 'do not know what it is,' 'do not know where to find it,' 'not enough variety,' 'prefer to other brands,' 'back of trust,' 'lesser quality,' and 'high-price.'

Barriers to green consumption were consumer's unawareness and distrust of green products. The Korean government has tried to promote green consumption with several kinds of green product information (Bae, 2009, Lee, 2000, Hwang, 2008); however, Korean consumers did not know what they were and tend to only use green information except for energy consumption efficiency labels. According to the study by Kim (2012), 81.9% of the respondents have seen environmental mark; however, cases that

recognized environmental mark symbols correctly were only 45.8%, 33.3% and 19.7% of respondents that correctly recognized environmental mark, energy saving marks and carbon mark, respectively. In addition, the experience to purchase products with environmental marks after recognizing the environmental mark symbols was only 39.6%. The study by Kang (2009) found a relatively low consumer awareness and understanding on voluntary environment marks that did not impose a mandatory consumer labels and environment marks on information delivery type that include professional information. Individuals purchased the products using green consumption information in the case of consumers who were aware of accurate contents about environment mark system; however, Korean consumers did not utilize environment marks and green consumption information well.

RESEARCH METHOD

Research Questions

The first question was what kind of green claims prevail in the Korean consumer market. The second question was what are the consumer perceptions of green consumption and green claims. It is important to analyze how consumers perceived the meaning of 'green' when they think about green consumption and how aware consumers are when they utilize green marks and green terms.

Data Collection and Survey Tools

The media analysis and in-context research (Shop visit) identified what kinds of green claims prevailed in the consumer market. All possible displayed green claims and presented products, that consumers routinely encounter in the market, were investigated. The problems of misuse and abuse were subsequently analyzed after the identification of green claims in print media and broadcast advertising. The target media published advertising in five daily newspapers (Chosun Ilbo, JoongAng Ilbo, Dong-A Ilbo, Hankyoreh Newspaper and Kyunghyang Newspaper) on May 24th 2010 and all advertising by two broadcasters (SBS and MBC) from 6:00 AM on May

29th 2010 to AM 2:00 on May 30th 2010. Product groups, brand, used mark and advertising copies related to green claims from all print advertising and broadcast advertising were recorded and analyzed.

Through in-context research (Shop Visit), various information of green claims displayed on products were identified and analyzed. The green claims included green terms, certified and non-certified marks, and other images. The target stores were three department stores (Shinsegae, Lotte and Hyundai) and three large discount outlet stores (E-Mart, Homeplus and Lotte Mart). A total of 28 pre-trained college students participated in the media analysis and shop visits with one group of two people. Prior to the research, they were taught about green consumption for an hour and were asked to collect any product information that they thought was related to a green claim. The duration of the on-site survey was two weeks from the end of May to early of June.

A survey was conducted to investigate consumer perceptions of green claims after the identification of the green claims in the consumer market. In the survey, the first question was to analyze what consumers perceived as 'green' when they said green consumption. The next question was to understand the level of consumer awareness, utilization and trust of green claims. To examine the level of awareness, 7 certified green marks and 15 green claim terms were selected from multiple green claims and were used to construct survey questionnaires. An online survey was performed via Embrain (www.embrain.com) in July, 2010 and survey respondent were 500 adult consumers over the age of 20. In terms of Age, the ratio from 20s to 50s was almost identical. In the case of educational level, college graduates were 56.6%, which was the most common, followed by high school graduates at 25.4% and 2-year college graduates at 16.2%. In terms of the average monthly

household income, 4,050,000 won a month was the most common. Those who took eco-friendly education were 12.2%. In terms of occupation of survey targets, office workers and civil servants, the homemakers and the self-employed were 45.4%, 20.6% and 13.2%, respectively.

RESULTS AND DISCUSSION

Green Claims Prevailing in the Market

1) Media Analysis

(1) TV advertising analysis

Table 3 shows the total number of TV advertisings and the number of advertised or displayed green claims. The total number of broadcast advertisements was 698 and the number of advertisements that included information related to green consumption was 97, which accounted for 13.9%. MBC had a slightly higher ratio of advertisements related to green claims compared to SBS.

Upon summarizing the green claims of TV advertising, most claims were related to food (beverages, yogurt, chewing gum, agricultural products, chicken, health food, condiments, ham, cheese, cold noodles, and powdered milk), pharmaceuticals, cosmetics, and home appliances (washing machines, air conditioners, water purifier and air cleaners) (Table 4). The contents of green claims emphasized the use of natural materials and natural ingredients such as natural pigments, natural materials, botanical ingredients, natural fermentation, herbal raw materials and spring water. The emphasis on organic, such as additives 0%, no additives and no coloring was also followed. In addition, the term 'eco-friendly' was widely used in food, housing, and other products.

Table 3. Total Number of TV Advertising and Percentage (%) of Advertising with Green Claims

SBS		MBC		Total	
Total No. of advertisements	Advertisement with green claims (%)	Total No. of advertisements	Advertisements with green claims (%)	Total No. of Advertisements	Advertisements with green claims (%)
393	52(13.2)	305	45(14.8)	698	97(13.9)

Table 4. Contents of Monitoring Information Related to Green Claims in TV Advertising

Product type	Name	Number	Used phrase
Food	Beverages, yogurt, chewing gum	13	
	Agricultural products, chicken	7	Natural pigment, natural material, additives 0%, no addition, organic, eco-friendly, domestic, no pigment seven star rating, low calorie, natural ground water, LOHAS certification, no addition of sugars (1 step), reducing sugar, raw brown rice natural fermentation
	Health food	6	
	Condiments	6	
	Ham, cheese, cold noodles, powdered formula	7	
Housing and home appliances	Apartments	2	Eco-friendly, energy consumption efficiency first rating, energy monitor, sterilizing system, eco, hazardous material removal, anti-virus
	Paint	1	
	Windows	3	
	Washing machines, air conditioners	9	
	Air cleaners, water purifiers	6	
Pharmaceuticals and cosmetics	Pharmaceuticals	9	Botanical ingredients, natural raw material, herbal ingredient, Love Eco, nature with high purity
	Cosmetics	7	
Miscellaneous goods	Detergent	3	99.9% sterilization, anti-bacterial, herb medicine extract, pure cotton texture, natural fibers
	Toothpaste	2	
	Wet tissue, sanitary pads	2	
	Deodorants, home mats, desiccant	5	
Others	Enterprise	4	Nature conservation, healthy earth, eco-friendly future technology, sincerity protecting earth
	Energy	2	Good energy

Table 5. Total Number of Newspaper Advertisements and Number of Advertisements Related to Green Claims

Name of newspaper	Total number of advertisements	Number of advertisements with green claims	Newspaper name	Total number of advertisements	Number of advertisements with green claims
Dong-A Ilbo	74	5	JoongAng Ilbo - general	61	5
Chosun Ilbo - general	43	4	Hankyoreh newspaper - general	40	1
Kyunghyang newspaper	16	0			
Total				234	15

(2) Analysis of newspaper advertising

The total number of newspaper advertisement was 234 and the number of advertisements that contained green claims was 15, which accounted for 6% (Table 5). The ratio of newspaper advertising (which included green claims) was lower than that of TV advertising. The green claims in newspaper advertisement included many green marks, certificates, and green terms and phrases. These were divided into 4 factors of Mark, Green-term 'Eco-friendly', Energy, and Low carbon. Table 6 shows the green marks, terms, and phrases.

An analysis of media advertising showed many non-certified marks with green claims; subsequently many of them were unclear in regards to certification. For example, there might exist an image or phrase alluding to organic, but no organic mark was displayed. There was also a display showing it had that it was made of eco-friendly agricultural products, but it had no certification. It looked similar to existing certified marks, but the color or design was slightly different from certified ones. There were many green claims that use natural & organic words and images without certification marks.

Table 6. *Green Claims in Newspaper Advertisements*

Theme	Used marks and phrase
Marks	Korea LOHAS Certification, medical device manufacturing management standards (GMP), FDA Registration, international environment management certification, Air Cleaning Association Certification, environment research institute certification, product safety autonomic implementation, green Korea (2009 eco-friendly energy product Small and Medium Business Administrator award)
Term: Eco- friendly	Eco- friendly / organic foods, health related to blocking electromagnetic wave and hazardous substances, Venerability from nature, vegetable ingredient 40 years, well- being technology, organic, natural raw material vitamins, non-toxicity to the human body, blocking electromagnetic waves, removal of microorganisms causing disease, triple safety devices
Energy	High- efficiency energy, Energy savings, alternative energy, recycling, Fuel cell, good energy, Smart eco system implementing the world's lowest consumption power 31.8 (kWh/ month) Energy saving – little electricity bill. Longer life of light bulb. Eco- friendly – it do not use mercury and gas for ignition. Eco-friendly energy product
Low carbon	Environment Mark: Low carbon, Green consumption, Sustainable Environment Support, Low Carbon Green Growth Committee, Green Start Network, Establishment of Eco Green Campus of Low Carbon and green growth, Clean Campus Movement, Nature Friendly Research Equipped with Removal Function of Environment Harmful Substances, Technology received the highest ratings of the global eco-friendly certified LEED

2) In- Context Research (Shop Visit). Due to the results of on-site studies, the collected green claims were classified by certification marks, green terms, and phrases (Table 7 and 8).

(1) Green Mark Analysis

Table 7 shows the green marks (multiple response) prevailing in the market. A total of 27 kinds and 239 cases of the certification marks were collected. Food of 6 kinds, low carbon of 4 kinds, energy of 6 kinds,, recycling of 4 kinds, ISO series of 1 species and others of 6 kinds (items were counted as separate ones if they were found on different brand or different products even if it was the same certification mark). Among the 239 cases of certification marks, a total of 213 cases and 26 cases were classified into domestic marks (certified by domestic institution) and overseas certification marks (certified by overseas institution), respectively. Among the domestic certification marks, a total of 153 cases were national certification marks and 28 cases were association certification marks. In addition, the certification marks of a company or marks of unclear accreditation agencies represented 32 cases. In the case of overseas certification marks, national organization certification marks were 7 cases and the association certification marks were 14 cases. A total of 5 cases were certification marks where it was impossible to identify other accreditation agencies.

In the Food Sector, there were 6 kinds of

certification marks such as organic, HACCP, no additives, and agricultural food geographical labeling, excellent agricultural product certification and LOHAS. Among them, organic related certifications had 43 cases, which were the most common and HACCP related certifications were 22 cases, which was the second largest. In Food Sector, most accreditation organizations were from the national government in regard to domestic certification marks. In the case of overseas certification marks, association certifications were 11 cases, which was slightly more than the national government certification that had 7 cases. In the case of the Eco-Friendly Mark, there were four species such as Eco-Friendly Mark, EDP, labeling of carbon emissions and products labeled low carbon; however, EDP was not found. In addition, most accreditation organizations were association certification (eco-friendly product promotion agencies). Certification marks related to carbon were also 100% of the national certification. In the case of recycling, recycling goods that use the GR mark, reusable mark and recycling mark (separate emission) were included; however, nothing except recycling (separate emission) had been found. Recycling separate emission marks was 100% of the national certification mark and overseas recycling related marks were not found.

An examination of the content of labeled marks in detail showed that food, cosmetics, other various miscellaneous goods and household goods had

Table 7. Status of Eco- Friendly Related Marks (Multiple Responses)

Classification	Domestic certification			Overseas certification			Total	
	A	B	C	A	B	C		
Food (6 species)	Organic	10		11	7	11	4	43
	HACCP	22						22
	No additives		1					1
	Agricultural food geographical labeling	1						1
	Excellent agricultural products certification	5						5
	LOHAS		13					13
Flow carbon (4 species)	Eco- Friendly mark	60						60
	EDP							0
	Labeling of carbon emissions	7						7
	Products labeling low carbon	2						2
Energy (6 species)	Energy consumption efficiency rating	3						3
	Energy saving mark	3		1				4
	Minimal consumption efficiency satisfaction							0
	High efficiency energy			1				1
	Standby power use							0
	Standby power warning Labeling							0
Recycling (4 species)	Use of recycling goods							0
	GR mark							0
	Reusable							0
	Recycling (separate emission)	40						40
ISO series			6					6
Others (6 species)	Organic, bio, eco			13			1	14
	Hygiene, safety mark		3					3
	CS (clean & safety)							0
	Blocking electromagnetic waves		1					1
	No bleach, no fluorescence							0
	Hazardous substance, allergy, no irritation		4	6		3		13
Total	153	28	32	7	14	5	239	

A : National certification B: Association certification C: Company's own, impossible to be identified

various marks representing green products with mixed certification marks and non-certification marks; subsequently, too many marks were extensively used. In the food sector, marks related to organic and marks representing organic existed very randomly; however, most cases had different colors or did not have a specific letter or specific labeling compared to existing certification marks.

There were significant numbers of overseas certification marks, individual company marks and non-certification marks of unknown accreditation

agencies. In addition to accreditation agency, certification validity period or certification contents were mostly unclear. Organic products had no description of which ingredients were included in the organic raw materials or the amount. We encountered a significant number of products with the individual marks of each company, which were not certified. It was likely that consumers could make a wrong decision based on the inaccurate information of these marks.

Table 8. *Types of Eco-friendly Claims and Terms*

	Food	Clothing, cosmetics, bedding	Automotive/ supplies	Furniture/ office supplies	Housing/ housing supplies	Kitchen/ household appliance	Personal belongings (detergent, shampoo)	Total
Eco-friendly	7 (6.4)	13 (27.1)	10 (18.5)	9 (42.9)	15 (25.4)	6 (20.0)	4 (13.3)	64 (18.2)
Nature	4 (3.6)	4 (8.3)	1 (1.9)		2 (3.4)		2 (6.7)	13 (3.7)
Natural	2 (1.8)	7 (14.6)	10 (18.5)	1 (4.8)			2 (6.7)	22 (6.3)
Green		1 (2.1)	3 (5.6)	1 (4.8)	1 (1.7)	1 (3.3)	1 (3.3)	8 (2.3)
Eco		3 (6.3)	5 (9.3)	1 (4.8)	1 (1.7)	3 (10.0)		13 (3.7)
Organic	50 (45.5)	8 (16.7)					2 (6.7)	60 (17.0)
Clean	3 (2.7)		2 (3.7)		1 (1.7)			6 (1.7)
Energy saving			3 (5.6)		7 (11.9)	2 (6.7)		12 (3.4)
Fuel efficiency			3 (5.6)		7 (11.9)	3 (10.0)		13 (3.7)
Carbon emission			1 (1.9)	1 (4.8)				2 (0.6)
ISO Series	3 (2.7)				1 (1.7)			4 (1.1)
Reuse / separate emission				1 (4.8)	2 (3.4)		2 (6.7)	5 (1.4)
Environment conservation	4 (3.6)			1 (4.8)	1 (1.7)	2 (6.7)	1 (3.3)	9 (2.6)
Sustainability / new renewable energy					5 (8.5)			5 (1.4)
Pollution reduction		2 (4.2)	2 (3.7)		7 (11.9)		2 (6.7)	13 (3.7)
Human body safety / peace of mind / non toxicity / hazardous substance	1 (0.9)	5 (10.4)	10 (18.5)	5 (23.8)	5 (8.5)	11 (36.7)	5 (16.7)	42 (11.9)
No pesticides / no pollution / no harm	20 (18.2)				7 (11.9)			20 (5.7)
No additives / no fluorescence	13 (11.8)	3 (6.3)			5 (8.5)		8 (26.7)	24 (6.8)
Anti-bacterial/ hygiene				1 (4.8)	2 (3.4)	2 (6.7)		5 (1.4)
Wellbeing	1 (0.9)	2 (4.2)	1 (1.9)		2 (3.4)		1 (3.3)	7 (2.0)
Others	2 (1.8)		3 (5.6)					5 (1.4)
Total	110 (100.0)	48 (100.0)	54 (100.0)	21 (100.0)	59 (100.0)	30 (100.0)	30 (100.0)	100.0

(2) Table 8 shows green terms and phrases results in the sectors of food, clothing, automotive, furniture and office supplies, housing and housing supplies and personal belongings. First, the most frequently used claim term was 'eco-friendly' at 18.2% of the total, 'Organic' followed with 17.0%, and 'Human body safety/ peace of mind/ non- toxicity/ hazardous substance' followed 11.9%.

In food advertising, 'organic' was the most common term when viewed as groups of products. There were some cases that used only 'organic

product' or 'corn organic'; in addition, there were many expressions with no pigment, no preservatives and no agricultural pesticides. There were some expressions of eco-friendly and LOHAS. In clothing and miscellaneous goods, the most commonly expressed terms were green terms such as 'eco-friendly', 'organic' and 'natural'. In automotive and automotive supplies, there were many expressions in terms such as 'eco-friendly', 'natural', 'human body safety, peace of mind, non-toxicity, and hazardous substance'. The expression of 'RoHS (restriction of

hazardous substances) eco-friendly' was mainly used for furniture and office supplies. In housing advertising, expressions (where materials for housing were eco-friendly) and energy saving parts (fuel and saving water) were eco-friendly and were mainly used since they reduced pollution and made products reusable. In personal belonging advertisements, various expressions related to green emerged. Expressions of organic materials, natural materials and natural ingredients (even natural derived ingredients) were common. In addition, expression such as no fluorescence, no bleach and no smell were common. In addition, there were interesting expressions such as carbon cash back product, ozone layer preservation and eco-friendly wellbeing.

The term of 'eco-friendly' were widely used regardless of items. It was found that eco-friendly claims and the use of the term varied slightly depending on the items. In addition, the term for eco-friendly claims was sometimes used in conjunction with eco-friendly related marks; however, many cases had a company's own environmental self-claims.

Consumer Perceptions of Green Consumption and Green Claims

1) Consumer perceptions of Green consumption

Green consumption is generally defined as 'when purchasing goods and services, the consumption

motive is the purchase of eco-friendly products in consideration of the environment, the reduction of carbon emissions, and the efficient use of resources (Bae, 2010). However, the identification of consumer awareness on green consumption through a survey indicated that consumers understand the concept of green consumption to be "helpful to macro environment to prevent climate change" as well as ultimately helpful for the health and safety of consumers in the category of green consumption.

Table 9 shows that, among survey targets of 500, the meanings of green consumption over 40% of respondents select were 'consumption to prevent the environmental pollution,' 'consumption which is helpful for health of me and my family,' 'consumption to discharge carbon less,' 'consumption saving and consumption to use goods long,' 'consumption to use natural materials and natural ingredients' and 'reuse of resources and consumption of recycled products' However, the ratio of consumers that selected 'consumption not to affect climate change' was only 25.8%. This implied that consumers do not clearly classify the macro environment and proximity environment (living village or housing environment, close living environment) when talking about environment direction. When they actually choose a certain selection based on green consumption, it was more likely that they favor the proximity environment (for example, health of me and my family) rather

Table 9. *Concept of Green Consumption that Consumers are Aware of (Multiple Responses)*

Item	Absolute (%)	Relative (%)	Item	Absolute (%)	Relative (%)
Consumption to prevent environment pollution	72.6	14.5	Ethical consumption	9.0	1.8
Consumption to be helpful for health of me and my family	40.8	8.2	Organic agricultural product consumption	29.0	5.8
Consumption to discharge less carbon	50.2	10.0	Consumption of products which are less processed	14.6	2.9
Consumption of domestic goods rather than imported goods	16.6	3.3	Use and consumption of natural materials and natural ingredients	47.6	9.5
Consumption of Fair Trade products	7.8	1.6	Reuse of resources and consumption of recycled products	61.0	12.2
Consumption saving, consumption to use goods for a long period of time	53.2	10.6	Consumption for physical and mental wellbeing	11.8	2.4
Consumption of products of a high quality based on price	16.4	3.3	Consumption that will not influence climate change	25.8	5.2
Consumption of products produced in the local area	6.8	1.4	Consumption of products that are harmless to the human body	36.8	7.4
Total	500	100			

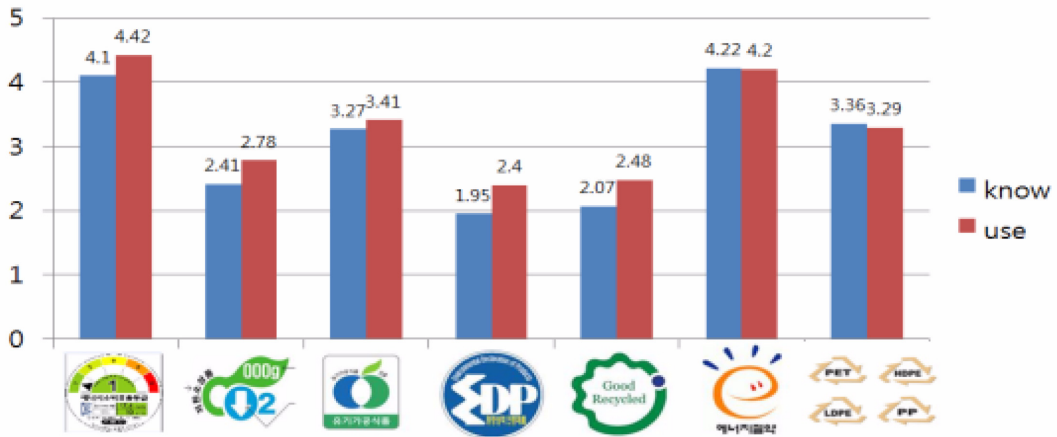


Figure 1. Consumer Awareness and Utilization about Green Consumption Information (mark).

Table 10. Awareness of the Green Terms

Green terms	Answer	% of right answer
1. Organic farm products do not use any chemicals or fertilizer	No	19.4
2. Organic label applies only to food products	No	55.2
3. Biodegradation is the chemical dissolution of materials by bacteria or other biological means	Yes	80.6
4. Carbon footprint is the total sets of greenhouse gas emissions caused by an organization, event, product or person	Yes	65.4
5. Saving energy certified products expand less standby power	No	14.2
6. Eco-friendly mark is only for the products that reduce pollution or save resources	Yes	79.8
7. Energy-efficiency Low 1 means 50% of energy of Level 2	No	42.0
8. Government decides the standards of all eco-certification	No	26.0
9. Energy-efficiency labeling is compulsory only for TV, Ref., Air-conditioner & lighting instruments	No	47.0
10. GR mark means well-recycled products	Yes	31.2
11. Food miles refers to the distance food is transported from the time of its production until it reaches the consumer.	Yes	79.0
12. 'No-pollution' term can be used only for certified products.	No	10.2
13. 'Eco-friendly' products have a safe impact on the environment	No	48.6
14. PET or PP refers to certain materials used to make products	Yes	72.4
15. Standby power refers to the electric power consumed by electronic and electrical appliances when they are switched off	Yes	45.4

than the macro environment (climate or ecology).

2) Consumers awareness and usage of green claims
 A total of 7 green marks and 15 green terms were selected and used to understand how well consumers are aware of and use green claims. The first awareness measure examined how well consumers know each green marks. It was measured on a 5-

point Likert scale. The most well known 2 marks by consumers were energy consumption efficiency mark and energy saving products mark while the least known ones were the environmental declaration products mark and good recycled product mark. Consumers tended to utilize the energy consumption efficiency mark most when they made a purchase; however, they seldom used

good recycled product mark. Many consumers complaint that it was not easy to judge which ones were trustworthy green information because there were too much greenwashing information.

The second awareness measure was on how well consumers know the meaning of green terms. The explanation of 15 green terms were displayed and consumers were asked to check if the explanation was correct. Table 10 shows the percentage of respondents who perceived a right answer for each term.

The percentage of right answer for each term is low in general, from 10.2% to 80.6%. The most well understood green term was biodegradation (80.6%), follow by terms such as 'Eco-Friendly Mark' (79.8%), 'food miles' (79.0%), 'PET/PP label' (72.4%). However, less than 20% of respondents were unaware of the meaning of 'organic farm foods', 'energy-saving certification', and 'usage of no-pollution term'. Many consumers answered that they knew and used several green marks, but they seemed not to understand the meaning.

CONCLUSION

The market for green products has increased in recent years, and the importance of green claims is stressed as consumer information are required when selecting products. In order to expand green consumption, consumer information related to green products, which a consumer purchases, should be easily understood and be reliable. However, according to the Consumer Focus (2010), it was found that consumers could not check if products, packages or services had actual standalone advertising environmental characteristic. Consumers were confused by too many environmental claims and undifferentiated product packaging. This study examined the status of green claims provided in the market and how consumers perceive green consumption and green claims.

Consumer information required for the purchase of green products includes advertising through media such as TV or newspaper and product labeling. The media research and on-site research of this study

showed many cases of non-certified green mark (company's self-design) and unclear marks, whether it was certified or not. There were many cases which were not certain on accreditation agency, validity period and contents of certification. There was no description of specific eco-friendly contents in case of terms that claim the eco-friendly attributes.

There were two reasons for consumer confusion in regards to green consumption. One reason was that consumers did not know the meaning of 'green consumption' and green claims. The study results showed that many consumers considered green consumption as 'organic agricultural products or natural product purchases' that were useful for the health and safety of consumers instead of for the reduction of carbon emissions or conservation of resources. In addition, consumers did not understand the meaning of green marks and green terms even though they reported that they were aware of them.

The second reasons for consumer confusion in the field of green consumption was greenwashing in the consumer market. Companies actively utilize environment marks to show environmental aspects. This can cause consumer confusion by attaching marks unrelated to environmental issues and marks manufactured in a similar form as national certification marks. The interest in eco-friendly products is growing; subsequently, the number of companies using the green marketing strategy to establish the eco-friendly image is also increasing. Relative to this environment, awareness in the increased false advertising are related to environment claims.

The following suggestions are made based on the results of this study First, consumers should be educated on the motivation and exact motivation to understand why green consumption is required. Increased worries and consumer mistrust over green consumption were partly due to the indiscriminate use of terms such as 'eco-friendly', 'no pollution', 'organic', 'green', 'cleanliness', 'nature/ natural' and 'safe to the human body'. The important meaning of green consumption is a consumption behavior with the intention to reduce carbon emissions and conserve resources; therefore, education about green consumption should be made to encourage consumers

to understand green product information.

When looking at the result of market investigation, in this study there is a requirement to examine if organic foods are a synonym for organic farming and green consumption. The terms of natural raw materials or ingredients were significantly used in pharmaceuticals and cosmetics; however, there is a requirement to examine if organic foods are a synonym for organic farming and green consumption to secure the standards about the meaning of natural. Materials that are natural go through several processing steps and are used for products in a transformed shape; the continued use of the term natural will confuse consumers.

Second, there is a requirement to strengthen the regulation in regards to company's own marks that can attach to products. Consumers did not differentiate the marks attached to products such as national certification, association certification or company's own certification. Therefore, the presentation method of certification marks and terms should be controlled and supplemented. A consumer should be able to understand accurately what information it implies in detail by looking at a certification mark since the accreditation agency, the validity period of certification and the contents of certification are labeled. For example, if the phrase of 'environmental friendly' is written, it describes that it is eco-friendly because it was not bleached with chlorine, which is known to produce hazardous substances in specific product packaging materials.

These results show the awareness in which green claims provided in the market was mostly inaccurate and not reliable, as well as with consumers make a wrong decisions based on inaccurate green information. Consumers may forgo the purchase of green products because of confusion that surrounds them. A company should help consumers obtain accurate information through the improvement of labeling methods that show the detailed meaning on terms and claims related to the environment. The government should establish the use of guidelines for claims and terms in order for a companies to provide accurate green information.

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