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경제학석사학위논문

**The influence of food choice motives and
objective and subjective knowledge on
organic food consumption**

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Abstract

The influence of food choice motives and objective and subjective knowledge on organic food consumption

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The aim of this study is to examine the influence of six different food choice motives and objective and subjective knowledge on consumers' attitude toward organic food and organic consumption based on the Theory of Planned Behavior (TPB) model. The online survey was conducted in October 2015 and data were collected from a sample of 343 in South Korea. This study applied structural equation modeling (SEM) by using a PLS-graph and discovered that among six different motives, concern for health and the environment were found to be the

main factors in explaining organic food consumption. In addition, subjective knowledge about organic food had a positive effect on attitude toward organic food. Based on the empirical results, several suggestions are provided to the institutions as to facilitate the organic sector's on-going expansion in South Korea's food industry.

Keywords: Organic food; Food choice motives; Knowledge; Consumer attitudes; Theory of Planned Behavior

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I. Introduction

1. Background

Over the last few years, there have been many health crises stemming from the food industry, such as the mad cow disease, salmonella, and Escherichia coli 0157 outbreaks, causing anxiety among consumers about food safety issues (Miles and Frewer, 2001). In addition, the growing environmental awareness and well-being trends have also led people to question the potential hazards of conventionally grown foods produced with the use of pesticides and residues, chemicals that are perceived to be associated with long-term and unknown effects on health and the environment (Wilkins and Hillers, 1994).

These trends have been reflected in an increase in demand for organic food, produced without the use of synthetic chemicals. This is because organic foods are perceived to be less damaging to the environment and healthier than those produced through modern agricultural practices (Wilkins and Hillers, 1994). The organic food market has become one of the rapidly growing sectors in most

developed agricultural economies around the world. According to a report by the Korea Agro-Fisheries & Food Trade Corporation, over 78 million hectares of land worldwide are managed organically in 170 different countries.

The increasing popularity of organic food has led to the growth of diverse research investigating the characteristics of organic consumers and the driving and deterrent factors of organic food consumption. Some of the studies have examined the effect of several food choice motives, including sensed characteristics of food, absence of food additives, preservatives, and residues, and concern for the environment and health, on organic food consumption (Magnusson et al. 2001; Torjusen et al., 2001). Other studies have found that obstacles such as high prices, inconvenience and lack of availability, and uncertainty, are important deterrents in organic food purchase behavior (Chen, 2007; Zanolli and Naspetti, 2002).

The organic food depends highly on consumer demand, as consumer purchase decisions are based on subjective experiences and perceptions of organic foods. Thus, it is important to understand

consumer's attitudes and the motivations for purchase underlying actions towards organically grown products (Baker, Thompson & Engelken, 2004). The empirical results and findings focused on understanding the motivations of organic consumers are expected to provide practical suggestions and implications for institutions, organic food farmers, and marketers to facilitate the organic sector's ongoing expansion in Korea's food industry.

2. Research questions

The main purpose of this study is to find the factors that explain consumers' choice of organic food which will enhance our understanding of the motivations of organic consumers.

More specifically, this study will investigate the main effects of six different food choice motives on the consumers' attitude towards organic foods and their actual purchase behaviors. These motives include health, food safety, convenience, price, sensory appeal, and ecological motives, and objective and subjective knowledge. This study will then examine the possibility of predicting consumer attitudes towards and purchase of organic foods on the basis of such perceptions.

II. Literature Review

1. Organic food

1.1 Definition and the trend of organic food

Organic food is produced based on certain criteria of farming methods, and the criteria are slightly different among each country. In general, materials and methods that are used to produce organic food are considered to enhance the ecological balance of natural systems. For instance, organic food is produced without the use of synthetic chemicals, such as pesticides and fertilizers, and do not include genetically modified products. Although studies have not yet found clear evidence that organic foods are healthier than conventional foods, consumers who are concerned about chemicals used in production and believe them to be risky are found to prefer natural foods and perceive foods labeled as organic to be healthier and more natural than conventional foods (Grankvist and Biel, 2001).

Along with the increase of environmental and health concerns, the organic market increased considerably in recent years and is frequently regarded as one of the biggest growth markets in the food

industry (Hughner et al., 2007). According to the Global organic food report from Korea Agro-Fisheries & Food Trade Corporation, the global organic food market increased from 54,688 dollars in 2009 to 74,816 dollars in 2013 which has 8.1% of average increase rate per year. The report expects the organic market will grow continuously and will reach 99,881 dollars in 2018.

Table 1 Global organic food market revenue from 2009 to 2013

Year	Revenue (USD million)	Revenue (Euro million)	Increase rate(%)
2009	54.668	41.178	7.6
2010	58.838	44.302	9.2
2011	64.526	48.382	8.7
2012	69.867	52.607	7.1
2013	74.816	56.333	8.1

Table 2 Expected global organic food market revenue from 2014 to 2018

Year	Revenue (USD million)	Revenue (Euro million)	Increase rate(%)
2014	79,369	59,941	6.1
2015	84,618	63,714	6.6
2016	89,797	67,613	6.1
2017	95,079	71,590	5.9
2018	99,881	75,206	5.1

1.2 Previous studies of organic food

Given the continuous growth of the organic food market, there have been many studies conducted to find the characteristics of organic consumers and the main driving factors that have influence on the purchase of organic food.

Some studies examined the demographic characteristics of organic consumers. The demographic profiling is sometimes contradictory, but there have been some consistent results that have emerged across studies. In general, the studies have found that consumers of organic food are usually female, have children living in the household, and are older (Cicia et al., 2002). Parents usually take a great interest in the food they buy for their family and new parents purchase organic food for their baby. Magnusson et al. (2001), on the other hand, found that younger consumers usually pertains more positive attitudes toward organic food, but older consumers are found to be the main organic food purchasers as organic products which have price premiums are more affordable by older consumers. Studies also have shown both negative and positive relationships between income

and education and organic consumption (Hill and Lynchehaun, 2002).

In addition to demographic profiling of organic consumers, other research have focused on studying consumer's perceptions and understanding of organic food. These studies were conducted to measure how much consumers trust organic foods and to investigate how organic certification and labeling have an influence on consumer's perceptions. For instance, O'Donovan and McCarthy (2002) explored Irish consumer's perceptions of organic meat and found that organic meat purchasers believed organic meat to be superior in terms of quality, safety labeling and production methods, whereas organic non-purchase consumers tend to perceive conventionally produced meat as a superior or equal to organic meat. Aarset et al. (2004) also investigated consumer perception of organic food by using relatively new concept of organic farmed salmon. The results indicate that many consumers were confused with the term organic and were unaware of organic certification and labeling process, particularly with aquaculture. In addition, some consumers showed distrust in the regulatory process.

To enhance understanding of the characteristics of organic

consumers, the previous studies explored psychographic profile of organic consumers and considered it to be effective in describing the typical organic consumer. Jolly (1991) conducted mail survey and found that safety, freshness, health benefits, nutritional value, environmental effect, flavor, and appearance of product were important factors in choosing organic foods. Grunert and Juhl (1995) found that consumers who have strong environmental attitudes, which include concern for the environment, love for nature, and unity with nature, were found to purchase organic food. Fotopoulos et al. (2003) also conducted qualitative interviews and concluded that values of searching for pleasure, healthiness-long life and the pursuit of quality were the main factors for purchasing organic wine.

2. Motivation

2.1 Definition of motivation

The motivation is defined as a driving force that moves or incites people to act and is considered to be the underlying basis of all behavior to satisfy their needs, wants and desires (Kardes, 2014). In social and decision making sciences, understanding the fundamental

determinants of behavior has been an important goal, and motivation has been an important issue as it is at the core of biological, cognitive, and social regulation in the field of psychology (Ryan and Deci, 2010).

Motivation is often treated as a single construct with various experiences and consequences. People can be motivated because they value an activity or because there is strong external coercion. There is a macro human motivation and personality theory called Self-Determination Theory (SDT) which explains people's inherent growth tendencies and their internal psychological needs (Deci and Ryan, 2011). SDT distinguishes motivation into two different categories: intrinsic motivation and extrinsic motivation. Intrinsic motivation is the natural and inherent motive that search for challenges and new possibilities. Intrinsic motivation is the classical form of self-determination with a full sense of choice and people can do what they want without the feeling of coercion or compulsion. SDT relates intrinsic motivation with cognitive and social development. Extrinsic motivation is derived from person's willingness to pursue a goal or activity either forced or seduced by externally directed consequences (Ryan, 1991).

The way people evaluate their food when making choices is believed to be highly diverse and complex. There have been various studies conducted to understand the complexity of food choice behaviors. For instance, Wilkins and Hillers (1994) provide evidence that freshness, flavor, and nutrition to be the most influential factors in consumer food purchase decisions. Magnusson et al. (2001) also found sensory attributes, which include taste, odor, and texture characteristics, combined with the absence of food additives, price, and mood were important factors in food selection. There have been other factors such as food availability, culture, social interaction, weight control, stress and negative emotions, etc. found to be effective in making decision in food choice (Lau Kronndl and Coleman, 1984; McCann et al., 1990).

2.2 Motivation and organic food consumption

Several consumer studies on organic food have investigated the psychological motives of organic food consumption (Pino et al., 2012). Some studies have found that sensory attributes, including taste, odor, texture etc., have an influence on organic food consumption (Torjusen et al, 2001). Other studies provide evidence that non-sensory attributes

such as food safety and environmental concerns of foods are important motives in organic food consumption (Wandel, 1994).

Among these non-sensory attributes, both health and environmental concerns have been shown to mainly influence organic food consumption (Vermeir and Verbeke, 2008). Health concern is often found to be the most important factor in organic food purchase. Consumers buy organic food because they desire to avoid the chemicals used in conventional food production, believing that the use of pesticides is harmful and has long-term and unknown effects on health. Another line of studies considers organic food purchase behavior as a part of broader green purchase or environmentally friendly behavior (Honkanen et al. 2006). For instance, organic consumers believe the chemicals and pesticides used in conventional food production methods are environmentally harmful and organic food production methods are environmentally friendly (Wilkins and Hillers, 1994).

Besides health and environmental concerns, other non-sensory purchasing motives were found to influence organic food purchase. For example, concern for food safety has been identified as one of the

important reasons for the purchase of organically-grown food, because recent food crises have contributed to the increase of concerns about conventional food production methods (Jolly, 1991; Soler et al, 2002). Expectations of better animal welfare in organic production systems are another reason for purchasing organic food. Animal welfare is perceived as a multi-level construct which contains both nutritional and social components, as it is used as an indicator of food quality, food safety, and humane treatment of livestock (Torjusen et al. 2001). Lastly, Hill and Lynchehaun (2002) have found that some people choose to purchase organic food as they believe it to be more fashionable than conventional food products. This is partly because of the considerable coverage it has received in the media, the recent promotional campaigns, and the premium prices associated with organic food.

Although organic food generally receives favorable attitudes, research has illustrated some factors that limit organic food choice. For instance, Magnusson et al. (2001) found that between 46 and 67 percent of the respondents held positive attitudes toward organic food. However, the results show that only four to ten percent of the same respondents indicated an intention to purchase those foods. There are

several factors that were found to be associated obstacle in organic food purchase. The high price of organic food has been found to be one of the main consumption barriers for organic food (Zanoli and Naspetti, 2002). In addition, limited availability, satisfaction with conventional food, lack of trust, and lack of perceived value were other reasons that limit purchasing organic food (Fotopoulos and Krystallis, 2002).

3. Knowledge and its influence on consumption behavior

3.1 Knowledge

When making decisions, product knowledge has as an important role in consumer decision-making (Brucks, 1985). Knowledge is important in information processing and understanding when consumers make decision. Consumers must have a sufficient level of knowledge based on reliable information in order for information to have a favorable impact on their food choice (Verbeke, 2008).

Knowledge can be divided into two conceptually different constructs: objective and subjective (Brucks, 1985). Objective knowledge measures the accurate information about the product and

subjective knowledge measures what or how much people know about a product based on subjective understanding of what one knows. Both objective and subjective knowledge are clearly different concepts and have different impact on behavior (Kanwar, Olson, and Sims 1981). According to Brucks (1985), difference between subjective knowledge and objective knowledge occur when people do not accurately perceive how much or little they actually know. The subjective and objective knowledge relate to information search and decision-making behavior in different ways (Brucks, 1985). In the case of subjective knowledge, a low level of subjective knowledge drives people to search for additional information as they have a lack of confidence in current knowledge, while a high level of subjective knowledge increases reliance on previously stored information. Objective knowledge, on the other hand, uses newly acquired information and is associated with search for the information by asking a greater number of attributes questions (Brucks 1985).

There have been some studies conducted to find the influence of both subjective and objective knowledge on consumer's behavior. Bamberg and Moser (2007) examined the role of knowledge with

regard to environmental problems and found that knowledge is an important indirect determinant of pro-environmental behavior. Ellen (1994) conducted study to find the effect of both subjective and objective knowledge on the pro-ecological attitude and behavior and concluded that subjective knowledge was positively associated with committed recycling, source reduction, and political action, while objective knowledge was only significantly related to committed recycling. House et al. (2004) further examined different impact of both subjective and objective knowledge on the acceptance of genetically modified foods and found that higher levels of subjective knowledge has more important role in influencing consumer's willingness to eat genetically modified food, while that relation has not been found for objective knowledge.

3.2 Knowledge and organic food consumption

Knowledge about organic food is considered as an important factor in explaining the choice of organic food products (Z. Pieniak et al., 2010). Even though consumer knowledge continues to be crucial in the organic food market, there is still a segment of the market that is not

yet informed about organic foods (Yiridoe, 2005). Chryssochoidis (2000) underlines that weak perceived self-competence is likely to keep consumers away from organic food because they lack confidence in making a good choice. This supports the findings of Thøgersen (2007) who reports that uncertainty has a direct negative impact on the intention to buy organic food. As such, uncertainty about organic food is an important potential barrier for organic food consumption.

Several studies underscore the importance of knowledge and awareness about organic food for the further development of the organic food market. Stobbelaar et al. (2007) conducted a survey among adolescents of 15-16 years and discovered that those who have more knowledge about organic foods had higher positive attitude towards organic food. The attitude toward organic food shifted from neutral to positive by providing information and increasing knowledge about the production process of organic food. Padel and Foster (2005) state that if consumers were more aware of the reasons behind the price premium for organic products, they would be more willing to buy them. Other researchers also support knowledge about organic foods has a positive influence on the adoption of new eco-labels (Thøgersen, 2009).

4. Attitude and behavior

4.1 Theory of Planned Behavior and value theory

Expectancy Value Models (EVT) are the most popular models that are designed to predict and understand human behavior (Ajzen, 1991). Fishbein and Ajzen expanded EVT into the Theory of Reasoned Action (TRA) in the late 1970s and early 1980s. Ajzen constructed the Theory of Planned Behavior (TPB) in his book *Attitudes, Personality, and Behavior* (1988). Both TRA and TPB are predictive and explanatory theories that are widely used in areas such as health communication research, marketing, and economics.

The TPB postulates that behavioral intentions capture the motivational influences on behavior and intention is thus considered as the most proximal predictor of behavior (Ajzen, 1991). Social psychologists and marketing researchers have found great success in using Ajzen's behavioral intention model to explain the consumer's food choice behavior. The behavioral intention models have received strong support in numerous behavioral domains and are considered to be some of the most prominent theory in social psychology (Ajzen,

1991).

Intentions are an unbiased predictor of action and considered as the single best predictor of planned behavior (Ajzen, 1991). Fishbein and Ajzen (1975) have defined intention as a “Person’s location on a subjective probability dimension involving a relation between himself and some action”. Intention is influenced by three different factors. First one is purchasing attitude which is the attitude that the person holds toward engaging in the behavior. The second factor is subjective norm, which is the degree of social pressure felt by the person with regard to the behavior. The last one is perceived behavior control and it is the degree of control that the person feels he or she has over performing the behavior (Ajzen, 1991).

Behavioral intention is considered as a function of attitudes, subjective norms and perceived behavior control related to certain behavior (Ajzen, 1991). An attitude is a predisposition, formed by learning and experience, to respond in a consistent way towards an object, such as a product. This predisposition can be favorable or unfavorable. Attitudes are generally considered to have three

components: cognitive, affective, and conative. The cognitive component is sometimes called belief or knowledge component, which consist of the beliefs and opinions, based on some evidence that an individual holds about something, such as a place, an experience or another person. The affective component denotes the feelings and emotions about the destination or service and implies judgment based on emotion. Lastly, the conative is the action tendency, which can have a favorable or unfavorable character (Hoyer and MacInnis, 1997).

In social psychology, consumer research, and marketing, the link between attitude and behavior has been subjected to extensive research. Consumers' attitudes towards food and nutrition have been found to be important factors influencing food consumption behavior in general, as well as sustainable food consumption, and organic food consumption in particular (Aertsens et al., 2009).

Values theory is also often used to study the relationship between values and consumer behavior. Values are generally understood to be extremely stable constructs, and therefore values can serve as predictors of behavior over extended periods of time

(Krystallis et al., 2008). Personal values are one of the important factors found to influence organic food choice. For instance, literature indicates that the value “security”, which designates motivations concerning health, and “universalism”, which refers to appreciation and protection for the welfare of all people and for nature, are found to be important drivers behind organic food consumption. Other values such as hedonism, stimulation, self-direction, conformity and benevolence can also stimulate organic food consumption but are less influential (Aertsens et al., 2009).

III. Research Model and Hypothesis

1. Research Model

The present study develops a research model(Figure 1) that hypothesizes six different food choice motives, subjective and objective knowledge have influence on consumer’s attitude to organic food which in turn influencing purchase intention.

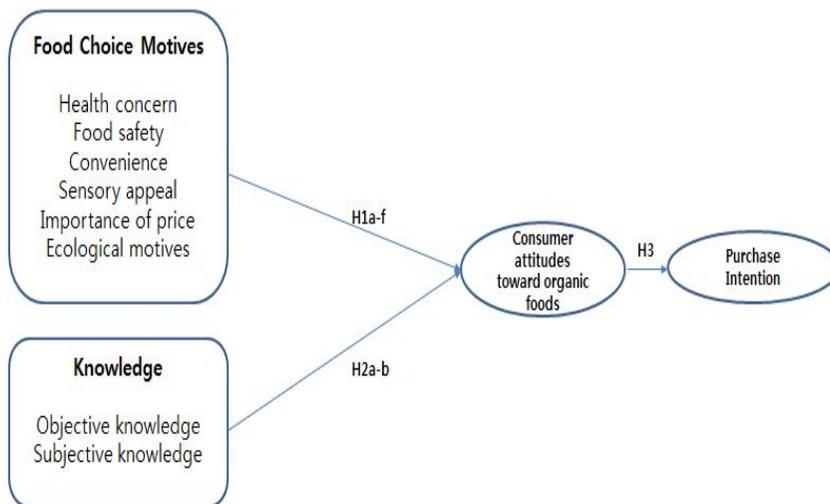


Figure 1 Research model

2. Hypothesis

2.1. The effect of food choice motives on consumer’s attitudes

toward organic food

Consumers who have higher interest in maintaining health usually practice healthy behaviors, such as nutritious and healthy food intake or physical activities, to increase the quality of life (Newsom et al, 2005). There is no clear evidence which supports the healthiness of organic foods, the studies have found that organic foods contain more primary and secondary nutrients which include vitamin C, dry matter, minerals, and have less risk of food poisoning (Heaton, 2001). Thus, organic consumers perceive foods labeled as organic to be healthier than conventional foods (Grankvist and Biel, 2001). Jolly (1991) states that consumers who believe organic foods to be more nutritious and healthy have a tendency to purchase more organic foods. Zanolini and Naspetti (2002) also found that health is considered as the most influential factor in explaining consumer's organic food choice. Also, other studies demonstrate a relation between consumer's health-related attitudes and their organic food consumption (Magnusson et al., 2003; Stobbelaar et al. 2007). Thus, this study developed a hypothesis to examine the effect of concern for health on consumer's attitude toward organic food.

Hypothesis 1a: Health concern will positively influence on consumer's attitude to organic foods.

Food safety issue has been a subject of public attention for a long time, and there have been growing concerns for food safety following with several food safety incidents (Hursti and Magnusson, 2003). The previous studies have found that concern for food safety is the important factor affecting the organic food purchase (Soler et al., 2002). Consumers perceive organic foods, which do not use synthetic pesticides, fertilizers, and food additives, are safer than conventional agricultural products and those of consumers concerned about pesticide residues and chemicals used to produce agricultural products choose to pay higher prices and purchase organic foods (Wilkins and Hillers, 1994). Thus, this study aims to examine if food safety has influence on the attitude toward organic food.

Hypothesis 1b: Food safety concern will positively influence on consumer's attitude to organic foods.

Convenience for consumer's preparation and purchase for daily food is usually an important factor (Chen, 2007). The availability of

products is important for consumers, because most consumers are pragmatic and do not go to several stores in order to get what they want (Hjelmar, 2011). This concept applies to organic food as well. Chryssohoidis and Krystallis (2005) state that consumers prefer to do the shopping in a convenient nearby supermarket and if this supermarket does not have a wide selection of organic food, many consumers end up buying non-organic food. For instance, Chen (2007) discovered that convenience food choice motive has a negative impact on consumer's attitude to organic food, as the growth area and the distribution channels of organic foods are still limited in Taiwan at the present stage which inconveniences consumers in their purchase of organic foods. Therefore, the following hypothesis is offered.

Hypothesis 1c: Convenience will negatively influence consumer's attitude to organic foods.

Sensory characteristics, which include smell, taste, and touch, are one of the significant factors in the choice of food. For instance, Magnusson et al. (2001) found that for Swedish consumers good taste is the most important purchase criterion when buying food. Also

Stobbelaar et al. (2007) found that for Dutch adults' taste is the most important motive for buying organic products. Fillion and Arazi (2002) conducted the blind taste tests between organic and non-organic organic juice and milk. In the experiment, they found that organic orange juice was perceived as tasting better than conventional orange juice, whereas there was no different between organic and conventional milk. Although this study concludes that the global claim which is organic food taste better is not valid for all organic food categories, consumers still believe organic food has taste advantages over conventional food. Therefore, this study formalizes hypothesis to investigate the relationship between sensory attributes and consumer's attitude to organic food.

Hypothesis 1d: Sensory appeal will positively influence consumer's attitude to organic food

Price is an important factor in food selection. Compared to regular produce, organic food is produced in more complex conditions, which require organic fertilizers and greater labor costs, resulting in the increase in price. Organic consumers choose to purchase organic food

as they perceive organic food to be safer and healthier than conventional produce (Magnusson et al, 2001). However, the high price of organic food still has been found to be the main obstacle in its purchase (Zanoli and Naspetti, 2002). For example, Millock (2002) found that consumers are willing, at least hypothetically, to pay a premium for organically grown food, but many are not willing to pay as much as the current market price premiums. Padel and Foster (2005) also found from laddering interviews that consumers were aware of the key attributes associated with organic farming, but many of them did not understand organic production process and the costs incurred. Therefore, this study aims to clarify the importance and relevance of price with attitude toward organic food.

Hypothesis 1e: Importance of price will negatively influence consumer's attitude to organic foods.

Over the last decades, concern about the environment has become an important issue across the world and there have been several movements to protect the environment and to increase public's environmental awareness (Peattie, 1992). Organic food is produced

with materials that are believed to enhance the ecological balance of natural systems. Consumers who believe organic food production method is environmentally friendly perceive the chemicals and pesticides used in conventional food products as being harmful to the environment (Wilkins and Hillers, 1994).

Many studies have found environmental concern to be a factor in consumer's attitudes towards organic foods (Squires et al., 2001; Soler et al., 2002). For instance, Thøgersen (2007) conducted a survey study of 1,000 respondents from Europe and found that concern for the environment is the main factor which motivates consumers to purchase organic food. In contrast, there are some contradictory results as well. Though environmental concern has been demonstrated to have a favorable influence on consumer attitudes, many studies have found that it is not a driving factor of organic food purchase. Rather, perceptions of good health, nutrients, and taste are more important in the purchase of organic food (Zanoli and Naspetti, 2002). Therefore, this study formalizes hypothesis to clarify the effect of ecological motives on consumer's attitude toward organic food.

Hypothesis 1f: Ecological motives will positively influence consumer's attitude to organic foods.

2.2 The effect of subjective and objective knowledge on consumer's attitudes toward organic food

There is a consensus that knowledge is an important factor in information processing and thus in the consumer decision-making process. There are several previous studies that underline the importance of knowledge and awareness for the further development of the organic food market. Several studies have underlined the lack of knowledge and confusion among consumers with the term organic food. Lack of knowledge and awareness is considered to be the main reason for consumers not buying organic food. (Aarset et al., 2006). Demeritt (2002) reports that 59 percent of respondents have never considered organic products because they did not know about them.

There are contrasting results of the effect of knowledge on information, whether or not subjective knowledge is a better motivator of behavior than actual knowledge (Radecki and Jaccard, 1995). The previous studies have found that subjective knowledge is a stronger

predictor of organic consumption behavior than objective knowledge (Pieniak et al.,2006). Thus, it is expected that both subjective and objective knowledge about organic foods have a positive effect on organic consumption.

Hypothesis 2a: The subjective knowledge will have positive effect on attitude toward organic food

Hypothesis 2b: The objective knowledge will have positive effect on attitude toward organic food

2.3 Attitude to organic foods and organic foods purchase

The Theory of Planned Behavior (TPB) and Values Theory can be used to explain the effect of individual's values on attitude which will in turn indicate consumers' intention to purchase organic food products (Chen, 2007). Attitude has been found to have strong correlational relationships with behavior and behavior intention (Sparks et al. 1995). Consumers' attitudes towards food and nutrition have also been found to be important factors influencing food consumption behavior in general as well as sustainable food consumption (Vermeir and Verbeke, 2006). Based on classical attitude-behavior theory and the

aforementioned empirical studies, this study examines a positive relationship between general attitude towards organic food and organic food consumption.

Hypothesis 3: When the consumer's attitude to organic foods purchase is positive, the consumer's intentions to purchase organic foods will be more likely to be positive.

IV. Research Methodology

1. Instrument Development

The questionnaire was based on the TPB. To measure what food choice motives determine the consumer's attitude to organic foods, revised Food Choice Questionnaire (FCQ) derived from Steptoe et al. (1995) was used. Among 12 different scales, 6 scales were selected and were scored on 7-point Likert scales. Other measures were also adapted from previous studies. General attitude towards organic food was measured with adjectives which are important, reasonable, and beneficial and were scored on 7-point bipolar scales. Subjective knowledge about organic food was measured by two items that were scored on 7-point Likert scales. Consumer's level of objective knowledge was measured by five statements that are true, false, or don't know. The objective knowledge measure was computed as the total number of correct responses; thus ranging from 0 to 5. I assumed that these five statements should be common knowledge among at least half of the population. The number of questions and scales that were used to measure the various constructs central to the study are summarized in Table 3.

The questionnaire was translated into Korean and the feasibility of each measuring instrument was explored during the pilot test. At the end of the pilot test, I asked the respondents to provide some comments. From these comments, several changes were made to improve the survey. First, the ambiguous expressions and grammatical errors were corrected. Second, some of the questions were shortened as they were considered too long to read and answer.

Table 3. Composition of the questionnaire

Hypothesis	Contents	Number of questions	Scales	Reference
Organic food choice attribute	Health Concern	4	7-likert scales	Steptoe et al. (1995)
	Food Safety	3		
	Ecological Motives	3		
	Convenience	3		
	Importance of price	2		
	Sensory appeal	3		
Knowledge	Subjective knowledge	2	7-likert scales	Z. Pieniak et al. (2010)
	Objective knowledge	5	True/False/Don't know	

Attitude	Attitude toward organic food	3	7-likert scales	Magnusson et al(2001); Conner et al (2002)
Intention	Consumer intention towards organic food	2	7-likert scales	Magnusson, et al(2001)

A structural equation model (SEM) using PLS graph was applied to the research model. Compared with a single equation modeling, SEM has substantial advantage in that it examines all the relationships between constructs and items simultaneously (Bollen, 1989).

2. Pilot Test of the Survey Instrument

Before conducting the experiment, pilot test was conducted to explore the feasibility of each stimulus and measuring instrument. Likert scales (1 to 7) with anchors ranging from “strongly disagree” to “strongly agree” were used for most questions pertaining to each construct. For the pilot test, 57 responses were collected. Table represents a profile of the pilot sample respondents.

Table 4 Profile of the pilot sample respondents

Profile Category		N=57	%
Gender	Male	23	40.4
	Female	34	59.6
Age	20-25	11	19.3
	26-29	24	42.1
	30-49	7	12.3
	50 or higher	15	26.3
Education	High school degree	6	10.5
	College degree	34	69.5
	Graduate degree	17	29.8
Children number	Have	23	40.4
	Do not have	34	59.6
Job Status	Professional	12	21.1
	Clerical	11	19.3
	Public official	2	3.5
	Business	2	3.5
	Student	16	28.1
	Housewife	7	12.3
	Others	7	10.5
Household monthly income	Below 2,000,000	14	24.6
	2,000,000-3,990,000	19	33.3

	4,000,000-5,990,000	9	15.8
	Above 6,000,000	15	26.4

Reliability was confirmed with Cronbach's alpha as the value greater than 0.70 is considered adequate (Bohrnstedt and Knoke 1994). For convergent validity check, individual item loadings were used. An individual item loading of 0.70 or higher from the partial least square method is believed to be a good measure. In addition, the validity of the measurement model is examined by the composite reliability (CR) index, PLS factor loadings, and average variance extracted (AVE). Values greater than 0.70 in CR imply that a construct has both its internal consistency and convergent validity (Werts et al. 1974). The recommended level of PLS factor loadings and AVE are 0.70 and 0.50, respectively. Items with less than a threshold that has been deleted are marked with a star (*).

Table 5 Reliability and Convergent validity check from Pilot test

Constructs	Items	Factor Loading	Composite Reliability	AVE	Cronbach-a
Health concern	Health1	0.9033	0.933	0.776	0.902
	Health2	0.9371			

	Health3	0.8609			
	Health4	0.8186			
Convenience	Con1	0.6639*	0.845	0.646	0.709
	Con2	0.8444			
	Con3	0.7439			
	Con4	0.7169			
Importance of Price	Price1	0.9338	0.971	0.944	0.939
	Price2	0.9351			
	Price3	0.6689*			
Food Safety Concern	Safety1	0.9436	0.960	0.888	0.937
	Safety2	0.9318			
	Safety3	0.9520			
Sensory Appeal	Sensory1	0.7950	0.877	0.706	0.792
	Sensory2	0.9208			
	Sensory3	0.3832*			
	Seonsory4	0.7586			
Ecological Motives	Eco1	0.8572	0.939	0.794	0.913
	Eco2	0.9073			
	Eco3	0.9028			
	Eco4	0.8966			
Subjective Knowledge	Know1	0.9360	0.934	0.876	0.857
	Know2	0.9360			
Attitude	Attitude1	0.8621	0.892	0.734	0.816
	Attitude2	0.8983			
	Attitude3	0.8074			
Purchase Intention	Intention1	0.9685	0.977	0.935	0.964
	Intention2	0.9683			
	Intention3	0.9637			

To examine the discriminant validity of the measurement

model, this study uses the square root of AVE and a cross-loading matrix. According to Fornell and Larcker (1981), the square root should be greater than the correlations among the constructs. Table 11 demonstrates that each construct is more highly correlated with its measure than with any other construct.

Table 6 Discriminant validity values from pilot test

	Health	Convenience	Price	Food Safety	Sensory	Ecological Motive	Subjective Knowledge	Attitude	Purchase Intention
Health	0.880								
Convenience	-0.176	0.804							
Price	0.095	0.322	0.972						
Food Safety	0.640	-0.316	-0.006	0.942					
Sensory	0.264	0.084	0.584	0.273	0.840				
Ecological Motive	0.543	-0.080	0.071	0.706	0.301	0.891			
Subjective Knowledge	0.493	-0.265	-0.027	0.499	0.054	0.397	0.936		
Attitude	0.374	0.044	0.237	0.382	0.390	0.465	0.201	0.857	
Purchase Intention	0.544	-0.172	-0.127	0.685	0.215	0.665	0.473	0.642	0.967

V. Data Analysis and Results

1. Data Collection

Data were collected using a web-based survey system. A consumer online survey has been conducted in October 2015. Before conducting a survey, the screening questionnaire was employed to ensure that there was a suitable spread of respondents. The past studies indicate that in general the organic consumer is a mature female with children living at home (Hughner et al., 2007). Thus, this study designed screening questions and examined females who have grocery shopping experience. After possible respondents were selected, we explained the purpose of the study before conducting the survey.

From online survey, a total of 353 responses were collected. Among these responses, 343 responses were usable, because 10 responses had serious missing data or were considered outliers.

2. Sample Characteristics and Descriptive Statistics

The demographics of the sample are summarized in Table 7. The total number of subjects is 343. With respect to age, subjects' ages are equally distributed from 20s to 50s. Most of the respondents are college graduates (75.2%) and are either working as clerical (37.3%)

ora housewife (32.7%). 62% of the respondents have children in house and the rest of them (37.9%) do not have children. 41.2% of respondents have income of 2,000,000-3,990,000 won per month and 25.7% have income of 4,000,000-5,990,000 won per month 21.6% have below 2,000,000 won, and 11.7% have above 6,000,000 won per month.

Table 7 Demographic characteristics of participants

Profile Category		N=343	%
Age	20's	85	24.8
	30's	84	24.5
	40's	86	25.1
	50's	88	25.7
Education	High school degree	61	17.8
	College degree	258	75.2
	Graduate degree	24	7.0
Children number	Have	213	62.1
	Do not have	130	37.9
Job Status	Professional	27	7.9
	Clerical	128	37.3
	Public official	6	1.7
	Business	16	4.7
	Student	27	7.9
	Sales/service	17	5.0
	Housewife	112	32.7

	Others	10	2.9
Household monthly income (won)	Below 2,000,000	74	21.6
	2,000,000- 3,990,000	122	41.2
	4,000,000- 5,990,000	88	25.7
	Above 6,000,000	40	11.7

Table 8 presents the results of the descriptive analysis of measurements. Among six different constructs of food choice motives, the mean values of health, food safety, and ecological motives are all above 5 points in the 7 Likert scales, which indicates that respondents are more concerned about health, food safety, the environment when choosing food. The mean values of convenience and price, and sensory are relatively lower than three previous constructs but were still higher than 4 points in the 7 Likert scale. The descriptive analysis demonstrates that these food choice motives play important roles when respondents purchase foods. The mean values of subjective knowledge, on the other hand, are below 4.0 points in the 7 Likert scales, which indicate that respondents are not confident with knowledge about organic food. The objective knowledge mean values of total right answers, total wrong answers, and total don't know answers are 2.9,

0.96, and 1.36 points in 5 scales respectively, which show that respondents get slightly more than half answers right about organic production method. The mean values of attitude toward organic foods are moderately positive, whereas mean values of purchase intention of organic food are lower than mean values of attitude toward organic foods.

Table 8 Descriptive statistics of item measures

Constructs	Items	Min	Max	Average	SD
Health Concern	Health1	2.0	7.0	5.69	0.92
	Health2	2.0	7.0	5.66	0.97
	Health3	2.0	7.0	5.46	1.01
	Health4	2.0	7.0	5.60	1.02
Convenience	Con1	2.0	7.0	4.98	1.18
	Con2	2.0	7.0	5.43	1.07
	Con3	1.0	7.0	5.52	1.08
Importance of Price	Price1	2.0	7.0	5.22	1.14
	Price2	1.0	7.0	4.78	1.25
Food Safety Concern	Safety1	3.0	7.0	5.41	1.03
	Safety2	2.0	7.0	5.40	1.07
	Safety3	2.0	7.0	5.38	1.07
Sensory Appeal	Sensory1	1.0	7.0	4.48	1.15
	Sensory2	1.0	7.0	4.68	1.12
	Sensory3	3.0	7.0	5.76	1.12
Ecological Motives	Eco1	1.0	7.0	5.57	0.93
	Eco2	2.0	7.0	5.22	1.09
	Eco3	1.0	7.0	5.16	1.18

Subjective Knowledge	Know1	1.0	7.0	3.84	1.18
	Know2	0.0	7.0	3.60	1.30
Objective Knowledge	Total right answers	0.0	5.0	2.9	1.58
	Total wrong answers	0.0	5.0	0.69	0.99
	Total don't know answers	0.0	5.0	1.36	1.60
Attitude toward organic food	Attitude1	2.0	7.0	5.36	1.12
	Attitude2	1.0	7.0	5.60	1.02
	Attitude3	1.0	7.0	4.85	1.10
Purchase Intention	Intention1	1.0	7.0	4.43	1.177
	Intention2	1.0	7.0	4.50	1.24

3. Common Method Variance

This study uses a self-report survey, which is the most common method of collecting data in social sciences but susceptible to common method variance (Malhotra et al. 2006). Common method variance (CMV) refers to variance that is attributable to the measurement method rather than to the construct of interest (Campbell and Fiske 1959). CMV usually occurs when measures of two or more variables are collected from the same respondents and the attempt is made to interpret correlations among those variable (Podsakoff and Organ 1986). Thus, while the use of self-reports, there is potential occurrence of

method variance between self-report variables which is assumed to be distinct (Podsakoff and Organ 1986).

When there is method variance problem, Lindell and Whitney (2001) recommend the use of a marker variable as a post hoc remedy. This method measures the correlation of a predictor variable with a dependent variable when the estimated effect of the common method variance is controlled. The marker variable need to be theoretically and statistically unrelated to at least one of the other constructs. For this study, preference to riding a bicycle was selected as a marker variable to examine the common method bias. As recommended, the marker variable was placed between the lastly asked independent variable (measurement of objective knowledge about organic foods) and before the firstly asked dependent variable (attitude towards organic foods). The correlation between the marker variable and the research variables was all under 0.1.

The correlation between the marker variable and the research variables was all under 0.5. Also, all correlations between the marker variable and other variables (numbers in bold) are relatively lower than

those among the other variable themselves.

Table 9Correlation of Latent Variables for examining common method variance

	Health	Convenience	Price	Food Safety	Sensory	Ecological Motive	Subjective Knowledge	Bicycle	Attitude	Purchase Intention
Health	1									
Convenience	0.340	1								
Price	0.099	0.430	1							
Food Safety	0.582	0.197	0.059	1						
Sensory	0.273	0.443	0.312	0.215	1					
Ecological Motive	0.509	0.258	0.181	0.621	0.344	1				
Subjective Knowledge	0.161	-0.044	-0.089	0.092	-0.035	0.089	1			
Bicycle	0.338	-0.091	-0.224	0.414	0.051	0.330	0.295	1		
Attitude	0.411	0.137	-0.069	0.399	0.069	0.396	0.425	0.126	1	
Purchase Intention	0.387	0.022	-0.220	0.443	0.009	0.364	0.582	0.195	0.571	0.959

4. Assessment of Measurement Model

4.1 Reliability Test

Reliability was confirmed with Cronbach's alpha as the value greater than 0.70 is considered adequate (Bohrnstedt and Knoke 1994). For convergent validity check, individual item loadings were used. An individual item loading of 0.70 or higher from the partial least square method is believed to be a good measure. In addition, the validity of the measurement model is examined by the composite reliability (CR) index, PLS factor loadings, and average variance extracted (AVE). Values greater than 0.70 in CR imply that a construct has both its internal consistency and convergent validity (Werts et al. 1974). The recommended level of PLS factor loadings and AVE are 0.70 and 0.50, respectively. Items with less than a threshold that has been deleted are marked with a star (*).

Table 10 Reliability and Convergent validity check

Constructs	Items	Factor Loading	Composite Reliability	AVE	Cronbach-a
Health Concern	Health1	0.9025	0.940	0.795	0.913

	Health2	0.9246			
	Health3	0.8707			
	Health4	0.8686			
Convenience	Con1	0.7988	0.908	0.767	0.842
	Con2	0.9184			
	Con3	0.9049			
Importance of Price	Price1	0.9371	0.935	0.878	0.859
	Price2	0.9371			
Food Safety Concern	Safety1	0.9226	0.954	0.873	0.927
	Safety2	0.9334			
	Safety3	0.9461			
Sensory Appeal	Sensory1	0.7709	0.876	0.702	0.780
	Sensory2	0.8670			
	Sensory3	0.8723			
Ecological Motives	Eco1	0.8521	0.941	0.799	0.916
	Eco2	0.9200			
	Eco3	0.9004			
Subjective Knowledge	Know1	0.9577	0.957	0.917	0.910
	Know2	0.9577			
Attitude	Attitude1	0.8684	0.887	0.725	0.808

	Attitude2	0.8719			
	Attitude3	0.8121			
Purchase Intention	Intention1	0.9596	0.9596	0.921	0.913
	Intention2	0.9596			

To examine the discriminant validity of the measurement model, this study uses the square root of AVE and a cross-loading matrix. According to Fornell and Larcker (1981), the square root should be greater than the correlations among the constructs. Table 11 demonstrates that each construct is more highly correlated with its measure than with any other construct.

Table 11 Correlations of the latent variables and the square root of the AVE

	Health	Convenience	Price	Food Safety	Sensory	Ecological Motive	Subjective Knowledge	Attitude	Purchase Intention
Health	0.892								
Convenience	0.327	0.846							
Price	0.099	0.424	0.937						
Food Safety	0.582	0.196	0.059	0.934					
Sensory	0.270	0.491	0.329	0.201	0.838				

Ecological Motive	0.540	0.281	0.172	0.643	0.348	0.894			
Subjective Knowledge	0.338	-0.097	-0.224	0.414	-0.027	0.346	0.958		
Attitude	0.411	0.142	-0.069	0.399	0.090	0.406	0.425	0.851	
Purchase Intention	0.387	0.039	-0.220	0.443	-0.011	0.375	0.582	0.571	0.960

5. Hypothesis Test

5.1 Food choice motives, objective, and subjective knowledge and attitude toward organic food

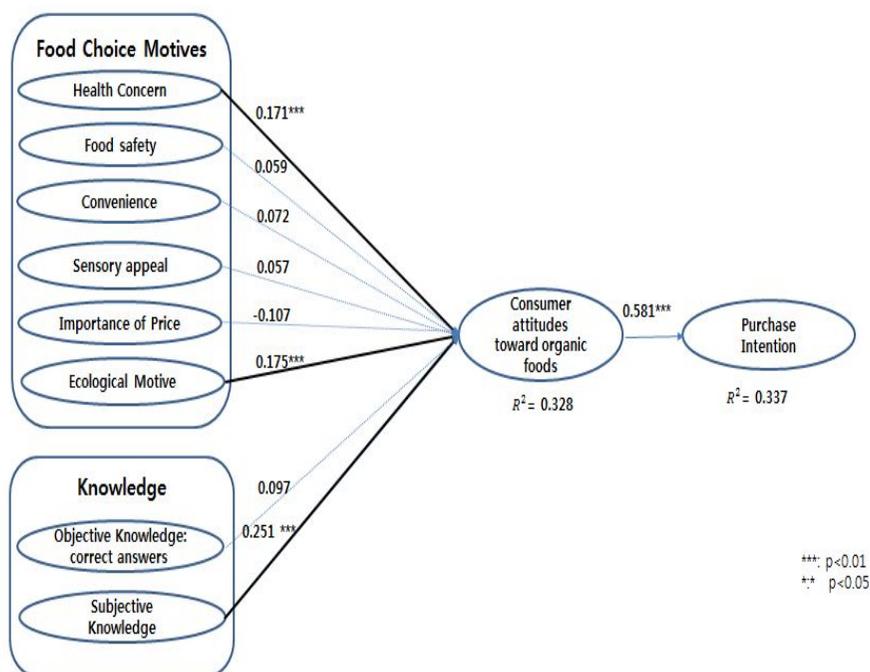


Figure 2 Structural model of food choice motive and objective and

subjective knowledge and organic food consumption

Table 12 The results of food choice motives and objective and subjective knowledge and organic food consumption

	Attitude toward organic food		Intention to purchase organic food	
	β	<i>T-statistic</i>	β	<i>T-statistic</i>
Health	0.17	3.00***		
Food safety	0.05	0.82		
Convenience	0.07	1.12		
Sensory Appeal	0.05	0.50		
Price sensitivity	-0.10	1.68		
Ecological motive	0.17	3.09***		
Objective knowledge	0.09	1.75		
Subjective knowledge	0.25	4.18***		
Attitude			0.58	13.98***

In order to investigate whether and to what extent consumers' food choice motives and knowledge, as well as general attitude toward organic food were associated with organic food consumption, a conceptual model has been developed and tested by means of a structural equation analysis. Different from LISREL and AMOS, PLS uses R^2 values to estimate how well independent variables explain the variance of latent variables. The R^2 value for consumer's attitude

toward organic food is approximately 0.32 and 0.337 for the consumer's intentions to purchase organic food. Thus, R^2 values provide satisfactory explanation for the dependent variables.

The results show that among six constructs from food choice motives, health concern ($\beta=0.171$, $p=0.01$) and ecological motives ($\beta=0.175$, $p=0.01$) are found to be the main factors influencing on the consumer's attitude toward organic food. This indicates that when consumers are more concerned about health and environment protection, they will more likely to have a positive attitude to organic foods. In this model, four other motives which include food safety, price, convenience, and sensory appeal did not contribute to the consumer's attitude to organic foods. Therefore, hypothesis 1a and Hypothesis 1f were supported in this empirical study.

Second, subjective knowledge ($\beta=0.251$, $p=0.01$) about organic food has shown to be important factor in explaining the choice of organic food consumption. Objective knowledge, on the other hand, was not found to be significant in explaining the consumer's attitude to organic food. Therefore, in this study, Hypothesis 2a is only supported.

Lastly, the results support a positive relationship between attitude and behavior for the case of organic food ($\beta=0.58$, $p=0.01$). Thus, Hypothesis 3 is supported in this study.

VI. Discussion

1. Summary of Findings

The first aim of this study was to investigate what food choice motives together with objective and subjective knowledge determine the consumer's attitude to organic foods, which in turn influence the subsequent purchase intentions based on Ajzen's (1991) TPB in a representative South Korean sample. The results of hypothesis testing are shown in table 16.

Table 13 The results of hypothesis testing

Hypothesis		Support
H1a	Health concern will positively influence on consumer's attitude to organic foods.	Supported
H1b	Food safety concern will positively influence on consumer's attitude to organic foods.	Not supported
H1c	Convenience will negatively influence consumer's attitude to organic foods.	Not supported
H1d	Sensory appeal will positively influence on consumer's attitude to organic foods.	Not supported
H1e	Importance of price will negatively influence consumer's attitude to organic foods.	Not supported

H1f	Ecological motives will positively influence on consumer's attitude to organic foods.	Supported
H2a	Objective knowledge will positively influence on consumer's attitude to organic foods	Not supported
H2b	Subjective knowledge will positively influence on consumer's attitude to organic foods	Supported
H3	When the consumer's attitude to organic foods purchase is positive, the consumer's intentions to purchase organic foods will be more likely to be positive.	Supported

This study found that non-sensory attributes, which include health and ecological motives, have more important effect on attitude towards organic food than sensory attributes. Other attributes, which include food safety concern, convenience, sensory appeal, and importance of price, were not found as significant in influencing the purchase of organic food products.

Hypothesis 1a: Health concern will positively influence on consumer's attitude to organic foods.

This finding corresponds with results from previous research which have found that concern for one's health and for the environment are the two most commonly-stated motives for purchasing organic

foods. Although there is no unambiguous evidence that organic foods are healthier than conventional foods, many consumers believe that environmental friendly production methods have benefits for health. The result discovered in this study supports previous studies which state that healthiness is an important criterion for food choice and consumers express great interest in issues relating organic food to health (Magnusson et al., 2003). Thus, this finding supports hypothesis 1a.

Hypothesis 1b: Food safety concern will positively influence on consumer's attitude to organic foods.

The results indicate the coefficient of food safety concern is not statistically significant in influencing attitude to organic foods. Unlike previous studies which have found that food safety is one of the important factors that motivates consumers' to purchase organic foods, this study supports that food safety concern is not a significant driver of organic food consumption. There is one possible explanation for this phenomenon. The previous studies indicate that consumers still have difficulty in identifying organic foods certificates and labels which are

used to indicate the safety of organic food products by proving the organic production methods. Thus, food safety is not found to be significant in influencing the attitude toward organic foods.

Hypothesis 1c: Convenience will negatively influence consumer's attitude to organic foods.

The findings show that convenience is statistically insignificant in influencing attitude to organic foods. Although the previous findings demonstrated that inconvenience is associated with low attitude to organic foods, this study proved that convenience is not an important factor in consumer's organic food purchase. One possible explanation is that consumers in South Korea nowadays can find organic products easily in organic specialty store, markets, and online-store. Thus, unlike previous literature, inconvenience is not significant factor that has effect on low attitude toward organic foods.

Hypothesis 1d: Sensory appeal will positively influence consumer's attitude to organic food

As shown in Table 16, sensory appeal was proved to be insignificant in influencing the attitude toward organic foods. The result

contradicts the previous findings that sensory appeal, particularly taste, has effect on consumer's attitude to organic foods. This study rather supports that non-sensory attributes, such as health and ecological motives, are more important factors influencing consumer's attitude toward organic food products.

Hypothesis 1f: Ecological motives will positively influence consumer's attitude to organic foods.

The economic progress in South Korea has led to greater public awareness of environmental protection issues. For instance, there have been active movements from the Korean government and also various campaigns to promote environmental protection. The result found in this study suggests that consumers in South Korea are concerned about the environmental protection problem more often in their daily food intake these days and have a more positive attitude to organic food as they perceive organic food to be less damaging to the environment compared to conventionally grown foods. This finding supports hypothesis 1f.

Hypothesis 2a: The subjective knowledge will have positive effect on

attitude toward organic food

Hypothesis 2b: The objective knowledge will have positive effect on attitude toward organic food

The results of this study demonstrate that subjective knowledge about organic food is an important factor in explaining the choice of organic consumption compared to objective knowledge. Subjective knowledge was strongly and directly associated with attitude toward organic food, whereas objective knowledge has no effect on organic food consumption. The results indicate that compared to objective knowledge, subjective knowledge is the more important predictor of organic food consumption. The findings explain the subjective knowledge has an influence on food consumption behavior and organic food consumption. The subjective knowledge includes an element of perceived certainty or uncertainty. Thus, as Thøgersen (2007) suggests, uncertainty about the organic food can be a potential obstacle in organic food consumption. Thus, hypothesis 2a is supported in this study.

In addition to structural equation modeling, the mean values of objective and subjective knowledge found in descriptive statistics

indicate that while respondents had high scores on objective knowledge, subjective knowledge rather had a moderate to low scores. The high objective knowledge and relatively low subjective knowledge are different from the findings from previous studies which suggest that most people feel overconfident about their knowledge (Alba and Hutchinson, 2000). These findings suggest that respondents did not perceive themselves as very knowledgeable about organic food, though their actual knowledge is relatively high. The possible explanation is that respondents are randomly selected from online survey and can lack experience of consuming organic food. The results, thus, indicate that these consumers may not feel confident about evaluating their knowledge about organic food.

Hypothesis 3: When the consumer's attitude to organic foods purchase is positive, the consumer's intentions to purchase organic foods will be more likely to be positive.

Lastly, this study shows a positive relationship between attitude toward organic food and purchase intention. This finding corresponds to basic attitudinal research stating that attitude is a predictor of

behavior and successful in using TBP model, which predicts behavior based on intention to perform the behavior (Ajzen and Fishbein, 2005). Hypothesis 3 is supported in this study.

2. Contributions and Limitations

2.1 The Theoretical and Practical Contributions

This study extends organic consumer's purchase behavior by examining the effect of both motives and knowledge on the relationship between attitudes toward organic food and purchase intention. The proposed models contribute to a better understanding of factors influencing organic consumption behavior. For instance, the empirical results prove that concern for health, environment and subjective knowledge are the main factors that influence forming positive attitude toward organic food which in turn has effect on purchasing organic foods.

The findings of this study propose that regulatory bodies and marketers interested in supporting the growth of the organic food sector may emphasize non-sensory attributes such as health and environment benefits of organic products rather than promoting sensory appeal about

organic food products.

In addition, the subjective knowledge was found to be an important factor in organic purchase behavior. Bigne' (1997) underlines that organic food knowledge is influenced by information provided by the public administration, mass media, ecological associations and shopping sites. To trigger consumers to purchase and experience the products, information and promotion campaigns may provide organic food temporarily at lower prices or provide visible place to organic products in a shop which will increase consumer's familiarity of organic foods (Pieniak et al., 2010). Moreover, communication efforts can also provide consumers with the subjective feeling of being informed. Providing education or information about organic food production process will enhance consumer's understanding of organic food which will positively influence on the attitude toward organic food. Increasing the trust about organic products, such as by using organic label, will be another indirect method to promote the purchase of organic food products.

2.2 Limitations and Future Research

This study faces several limitations. The first limitation of the study is that it has narrow scope of population. The results of this study should be interpreted within the specific range of its sample, and generalizations to the broader public need to be further validated. Therefore, it is recommended to prove the impact of food choice motives and subjective and objective knowledge on attitudes towards organic food consumption through using larger, representative and cross-cultural consumer samples.

This study also used a self-reported questionnaire to measure organic food consumption. The questionnaires used in this study are considered valid only when they adequately measure organic consumer's actual behavior without being influenced by consumer's attitude. For the future study, it is recommended to use real marketplace data to prove the results and understand organic consumer's behavior.

Lastly, this study focused on the effect of six different food choice motives and subjective and objective knowledge to understand organic consumer's purchase behavior. The model used in this study may not be complete. The future study can examine the influence of

other perceptions, motives, and barriers on organic food consumption.

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Appendix

Questionnaire

1. 다음은식품선택동기에관한질문입니다.

평소에식품을선택할때에각항목에대하여귀하께서중요하게여기는정도를표시해주십시오

식품선택동기							
건강	1=전혀동의 의 안함	2= 동의 안함	3= 약간 동의 안함	4= 보통	5= 약간 동의 함	6= 동의 함	7= 매우 동의 함
건강에좋은식품을선택하는것은 나에게중요하다							
영양이풍부한식품을선택하는것 은나에게중요하다							
단백질이풍부한식품을선택하는 것은나에게중요하다							
섬유질이풍부한식품을선택하는 것은나에게중요하다							
편의성및접근성	1=전혀동 의 안함	2= 동의 안함	3= 약간 동의 안함	4= 보통	5= 약간 동의 함	6= 동의 함	7= 매우 동의 함
조리하기간편한식품을선택하는 것은나에게중요하다							
집과직장주변에서쉽게구매할수 있는식품을선택하는것은나에게 중요하다							

가게나마트에서쉽게구매할수있는식품을선택하는것은나에게중요하다							
경제성	1=전혀동의 안함	2=동의 안함	3=약간 동의 안함	4=보통	5=약간 동의 함	6=동의 함	7=매우 동의 함
비싸지않은식품을선택하는것은나에게중요하다							
가격이싼식품을선택하는것은나에게중요하다							
식품안전성	1=전혀동의 안함	2=동의 안함	3=약간 동의 안함	4=보통	5=약간 동의 함	6=동의 함	7=매우 동의 함
첨가제를포함하지않은식품을선택하는것은나에게중요하다							
천연재료를사용한식품을선택하는것은나에게중요하다							
인공첨가물을포함하지않은식품을선택하는것은나에게중요하다							
감각적요인	1=전혀동의 안함	2=동의 안함	3=약간 동의 안함	4=보통	5=약간 동의 함	6=동의 함	7=매우 동의 함
향이좋은식품을선택하는것은나에게중요하다							
외관상으로보기좋은식품을선택하는것은나에게중요하다							

입안에서질감이좋은식품을선택하는것은나에게중요하다							
환경보호	1=전혀동의 안함	2=동의 안함	3=약간 동의 안함	4=보통	5=약간 동의 함	6=동의 함	7=매우 동의 함
환경오염이되지않는방법으로생산된식품을선택하는것은나에게중요하다							
동물들이고통받지않은방법으로생산된식품을선택하는것은나에게중요하다							
동물들의권리가존중된상태에서생산된식품을선택하는것은나에게중요하다							

2. 다음은귀하의유기농식품에대한주관적인지식과관련된질문입니다. 질문을읽고 귀하가느끼시는정도에표시해주세요.

	1=전혀동의 안함	2=동의 안함	3=약간 동의 안함	4=보통	5=약간 동의 함	6=동의 함	7=매우 동의 함
나는평균적으로다른사람들보다유기농식품에대해더많이안다고생각한다.							
나는유기농식품의품질을잘판단할수있다고생각한다.							

3. 다음은귀하의유기농식품에대한객관적인지식과관련된질문입니다. 정답을확실

히모르시는경우, 꼭 ‘모른다’ 를선택하여주시기바랍니다.

	1= 사실이다	2=거짓이다	3=모른다
유기농식품은화학비료를사용한다.			
유기농식품은화학살충제나제초제를사용하지않는다.			
유기농식품은합성농약을사용하지않는다.			
유기농식품에유전적으로변형이된식품(GMO)은포함된다.			
유기농식품은유기질비료를사용한다.			

4. 다음은유기농식품에대한태도에관한질문입니다. 질문을읽고귀하가느끼시는정도에표시해주세요.

유기농식품소비에대한귀하의태도를표시해주세요.	중요 하지 않다						중요 하다
유기농식품소비에대한귀하의태도를표시해주세요.	유익 하지 않다						유익 하다
유기농식품소비에대한귀하의태도를표시해주세요.	합리 적이지 않다						합리 적이다

5. 다음은 신체활동에 관한 질문입니다. 질문을 읽고 귀하가 느끼시는 정도에 표시해주세요요.

	1=전혀 동의 안함	2=동의 안함	3=약간 동의안 함	4=보통	5=약간 동의함	6= 동의함	7=매우 동의함
여가시간을 이용하여 나는 주로 자전거를 탄다							

6. 다음은 유기농식품에 대한 구매의도에 대한 질문입니다. 질문을 읽고 귀하가 느끼시는 정도에 표시해주세요요.

	1=전혀 동의 안함	2= 동의안 함	3= 약간동 의안함	4= 보통	5= 약간동 의함	6= 동의함	7= 매우동 의함
나는 다음번 식품을 선택할 때 유기농식품을 구매할 것이다							
나는 가능한 유기농식품을 구매할 것이다							