CONSUMER WILLINGNESS TO PAY FOR ORGANIC CHICKEN AND MILK IN KUŞADASI, TURKEY

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ABSTRACT

CONSUMER WILLINGNESS TO PAY FOR ORGANIC CHICKEN AND MILK IN KUŞADASI, TURKEY

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The aim of this study is to examine the consumer perceptions of consumers for organic foods and as well as finding their willingness to pay for organic chicken and milk. To this end, the econometric analysis is conducted by using double bounded dichotomous choice contingent valuation method along with a double bounded logit model. The data is created by conducting face to face surveys with a total of 720 people for chicken and milk cases on July, August and the first two weeks of September in Kuşadası. In the survey, both socio-demographic variables and habitual variables are utilized. In order to decide on the best models, correlations between the variables are taken into consideration and Akaike Information Criteria is minimized by dropping the most insignificant variables step by step. As the results show that, organic chicken consumers are generally females with an older age and children. Having a higher income, knowledge about foods and the prior consumption of organic foods is decisive on the willingness to pay. In the milk case, people with a younger age and no children are willing to pay more for organic milk, except that pensioners are willing to pay more for organic milk. Again knowledge on food and food security, and prior consumption of organic foods positively affects the willingness to pay for organic milk.

Keywords: Organic Foods, Dichotomous Contingent Valuation, Double Bounded Logit Model

ÖZ

KUŞADASI'NDAKİ TÜKETİCİLERİN ORGANİK TAVUK VE SÜT İÇİN FİYAT PRİMLERİNİN TAHMİNİ

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Bu çalışmanın amacı, tüketicilerin organik tavuk ve süt için ödemek istedikleri fiyat primini bulmak ve bunun yanında da organik gıdalara karşı algılarını anlamaktır. Bu amaç için ekonometrik analizler Çift Kısıtlı Dikotom (İkili) Seçim, Koşullu Değerleme Metodu ve çift kısıtlı logit modeli ile yapılmıştır. Tavuk ve süt vakaları için gerekli data Kuşadası'nda Temmuz ve Ağustos ayları ile Eylül ayının ilk iki haftasında 720 kişi ile yapılan yüz yüze anketler sonucu elde edilmiştir. Anketlerde hem sosyo-demografik özelliklerle ilgili hem de tüketim alışkanlıklarıyla ilgili sorulara yer verilmiştir. En iyi modele karar vermek için değişkenler arasındaki korelasyonlar dikkate alınmış ve Akaike Bilgi Kriteri her adımda en anlamsız değişken düşürülerek minimize edilmiştir. Sonuçların gösterdiği üzere, organik tavuk tüketicileri genelde yaşça büyük ve çocuğu olan kadınlardır. Yüksek gelire, gıda ve gıda güvenliği hakkında daha çok bilgiye sahip olmanın ve daha önceden organik gıda tüketiyor olmanın da ayrıca ödeme isteği üzerinde etkili olduğu görülmüştür. Süt vakasında ise, daha ziyade genç – emekliler haricinde - ve çocuk sahibi olmayan tüketiciler organik süt için daha fazla ödemeye isteklidir. Burada da gıda ve gıda güvenliği hakkında bilgi sahibi olmak ile organik gıdaları önceden de tüketiyor olmak ödeme istediğini arttıran faktörler olarak öne çıkmaktadır.

Anahtar Kelimeler: Organik Gıdalar, Çift Kısıtlı Koşullu Değerleme, Çift Kısıtlı Logit Modeli

To my family..

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CHAPTER 1

INTRODUCTION AND OVERVIEW

1.1. Introduction

Although previously the organic foods are seen as marginal products to capture interests of a particular consumer group, the importance attributed to organic foods has increased in time (Urena et al., 2007). Since 1999, the year that we have the data on organic production for the first time, the lands area devoted to organic agriculture has increased threefold and the organic foods started to be widely preferred by the consumers (Willer and Lernoud, 2013). This rapid rise in organic markets is associated with the discovery of the relation between nutrition and health, as well as the agricultural production methods and the environmental degradation. Especially three major factors contributed to the preference of the organic foods: health, taste and environmental-friendliness. The surveys conducted in different regions of the world prove this situation, although some differences can be observed in the ordering of the cited reasons among regions (Govindasamy and Italia, 1999; Gil et al., 2000; Millock and Hansen, 2002; Lotter, 2003; Bernard and Gifford, 2006; Krystallis et al., 2006; Hamzaoui-Essoussi and Zahaf, 2012).

There is considerable interest in the environmental economics literature to explore the consumer behavior of consuming organic foods by using socio-economic characteristics, consumption habits, lifestyles etc. These studies try to investigate the motivations behind consuming organic foods, the factors affecting people's decisions to pay a premium for organic foods, and the amount they are willing to pay for organic foods. They usually concentrate on two methods that are

widely used in environmental economics in order to examine these relations and the willingness to pay (WTP) for organic foods: stated and revealed preference methods. The former one is preferred more than the latter one due to its capability to capture the non-use values and the flexibility of creating the required data that will be explained in detail later.

As it is mentioned before, there is a general view about organic foods that they are healthier, tastier and more environmentally friendly than their conventional counterparts. In order to grasp an overview of the characteristics of organic food consumers in Turkey, perceptions of consumers about organic foods and the price premium they are willing to pay in the marketplace, we conducted this study. The aim of this study is to find the WTP for organic milk and chicken, and thereafter to investigate the factors affecting the respondents' decision to pay for these organic foods. For that purpose, surveys which are prepared by utilizing double bounded dichotomous choice contingent valuation method are conducted with 720 respondents. In analyzing variables affecting the willingness to pay of consumers, logit model is carried out with selected variables for milk and chicken separately.

Contributions of this study to the existing literature are threefold. First, an alternative econometric approach was utilized. Double bounded dichotomous choice method is used along with double bounded logit model. In addition, the two products used in the study –milk and chicken- have different characteristics in terms of processing. Milk can be counted as processed food due to homogenization and pasteurization processes; it is ready for the instant consumption after packaging. Chicken is sold as raw food and need to be cooked before consuming. Therefore, this study offers us a comparison of the WTP patterns of respondents among the processed and unprocessed foods. Lastly, given the insufficient number of available studies on predicting the WTP for some specified organic products for Turkey, this study provides insights to the general characteristics of the organic chicken and milk consumers as well as the WTP analysis.

The study is organized as follows: Chapter 1 briefly introduces the study and overviews the structure of international as well as Turkish organic food markets. Chapter 2 reviews the empirical literature for the organic food markets, Chapter 3 describes the empirical methodology, Chapter 4 provides the data used in empirical analysis, Chapter 5 presents the empirical results with the analysis and finally Chapter 6 concludes the study.

1.2. Overview of Organic Food Sector

According to the definition of FAO (Food and Agriculture Organization), organic farming is a system that relies on ecosystem's own management of sustainable agricultural practices by taking into account its impact on the environment. For this reason, organic farming does not allow the use of substances external to the system, i.e. the synthetic inputs; and instead operates in ecosystem cycles with customized treatments according to the regional conditions. The synthetic inputs include synthetic fertilizers and pesticides, growth hormones, veterinary drugs, genetically modified seeds and breeds, preservatives, additives, irradiation and the like (http://www.fao.org/).

Although, there were agricultural production methods in the world which sustain solely on environment's own mechanisms before the conventional production, agriculture has intensified and industrialized through technological developments (Olhan et al., 2005). The requirement of feeding the hiking world population has led to scientific developments in the area of agriculture in order to increase output and productivity (Morgan and Murdoch, 2000). These advances allowed human beings to increase agricultural yields with less resources and time by increasing soil fertility and efficiency; and alter the traits of organisms in a desired way such as herbicide-tolerance, insect-resistance in crops, and increased milk production in cows (Bernard and Gifford, 2006). Since this movement was rather supply-driven and proposed not many benefits to the consumers, it was reacted by proponents of organic farming.

Since the end of 1990s especially, the demand for organic products has grown steeper in line with the increasing awareness and attention of the consumers (Willer and Lernoud, 2013). In spite of the varying order of motivations that are lying behind the demand for organic foods for different regions, the main reasons are health, taste in foods and care for the environment. In addition, sustainable organic production is seen as a remedy to some problems that the earth faces; such as depletion of non-renewable resources, environmental degradation, increase in food-related health problems, and decreasing food quality (Olhan et al., 2005).

In local terms, Turkey's use of chemical substances and switch from an organic-like production to conventional/intensive farming corresponds to 1950s. With a skyrocketing increase, the level of chemical substances used in agriculture reached their existing limits within two decades. Introduction of Turkey with this –actually old- farming system in commercial scope corresponds to early 1980s with the demand from EU countries particularly for dried fruits (fig, grape, apricot etc.) and nuts (Olhan et al., 2005; Nardalı, 2011; Demiryürek, 2004). The variety and the volume of the organic products supplied were mostly determined by the demand from firms in EU countries. When the data about annual organic production are examined for the years between 2002-2012, as it can be seen in Figure 1, there is an increasing trend in production of organic foods although there are fluctuations in some years. These fluctuations might be due to food crisis and the resulting decrease in consumption.

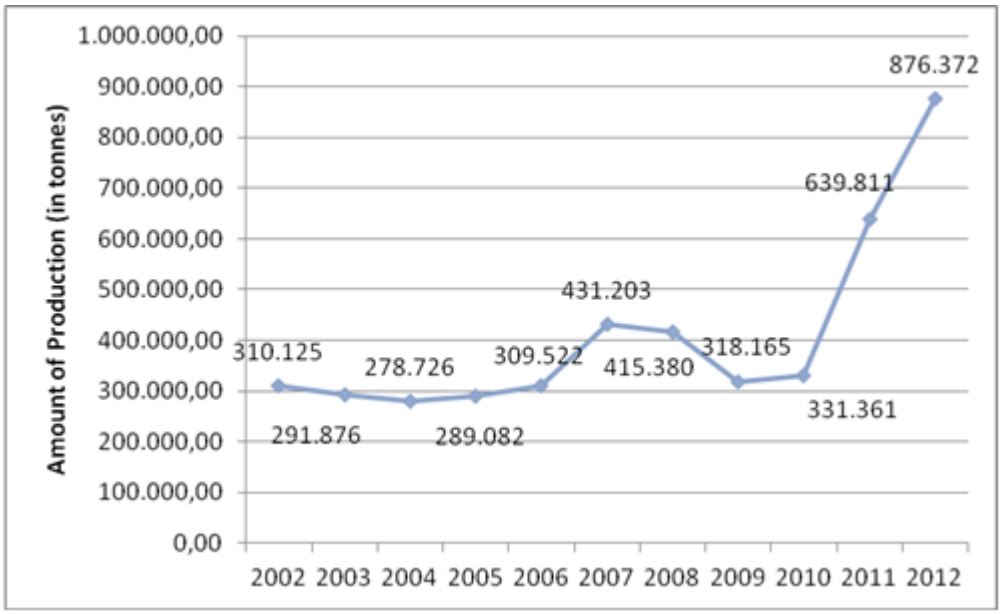

Figure 1. Production of Organic Foods in Turkey (2002-2012) Source: http://www.tarim.gov.tr/

Ministry of Food Agriculture and Livestock data (2012) show that the variety of crops produced increases in time. Only the number organic crops exported has increased to about 250 from 150 in 2002 while the foods of animal origin also gain importance (http://www.tarim.gov.tr/). When we look at the first ten products in terms of quantities exported, the highest amount belongs to wheat followed by apple, grape, trefoil, walnut, cherry, barley, tomato, pear and plum. In terms of livestock products; bee, chicken, goat and cow by-products are exported. In terms of value created, according to the figures of Aegean Exporters Union (2009), the main products with the highest export value for the year of 2009 are nut, dried sultana, dried apricot and dried fig followed by fruit compotes, olive oil, some cereals and pulses (http://www.tarim.gov.tr/). The data are provided voluntarily to Aegean Exporters Union, so that it might not be hundred percent accurate. However, it still provides an insight about composition of organic foods exported. Apart from organically produced crops, cattle raising, sheep and goat breeding, poultry raising and bee keeping started to be handled with organic practices.

It corresponds to early 2000s that the production was generally directed to external markets. Only after 2000, the sale of organic products in domestic markets started especially in specialty shops in metropolitan and/or touristic cities such as İstanbul, Ankara, İzmir, Adana, Antalya, Kuşadası, and Bodrum. The first hundred percent organic markets were established in İstanbul and Antalya (Ataseven and Güneş, 2008). It is stated in a recent study conducted by Demir (2013) that one of the first organic markets was settled in İstanbul with the cooperation of stakeholders united together under Buğday Association. The other organic markets opened after Şişli Organic Bazaar in İstanbul, are all supervised by Non-Governmental Organizations (NGOs) such as Buğday, Ecologic Producers Assocaition (EUD) and Ecological Agriculture Association (ETO). At first the organic products were sold together with the other home made products for promotion; prices were kept at reasonable levels, and customers were provided information. By this way, recognition of and demand for organic products have accelerated in domestic market. This movement is followed by further promoting activities such as fairs, courses and seminars by Ecological Agricultural Organization (founded in 1992 within Aegean University, Faculty of Agriculture) that is established for increasing the pace and health of organic movement in Turkey and encouraging the consumption of organic foods and informing producers about organic agricultural techniques (Nardalı, 2010; Ataseven and Güneş, 2008). After these initial movements, the first legislation made about organic foods was on 24 December, 1994 and the Ministry of Agricultural and Rural Affairs was authorized for the development of organic agriculture along with safety and quality of organic foods (Ataseven and Güneş, 2008). With the regulations about the legal structure, the production, variety and especially export of organic products have increased (Ataseven and Güneş, 2008; Özbilge, 2007).

When the worldwide growth rate of organic agriculture and the relative positioning of Turkey is considered, FiBL-IFOAM 2013 (Forschungsinstitut für biologischen Landbau/ Research Institute of Organic Agriculture- International Federation of Organic Agriculture Movements) survey provides us with the required

data (Willer and Lernoud, 2013). According to the data provided from 162 countries, total area devoted to organic agriculture is about 37.2 million hectares, apart from the 32.5 million hectares of non-agricultural, wild collection lands, and it is equal to 9% of all agricultural lands. The highest share belongs to Oceania consisting one third of all organic agricultural lands. The shares of continents are as follows: Oceania (12.2 million hectares), Europe (10.6 million hectares), Latin America (6.9 million hectares), Asia (3.7 million hectares), North America (2.8 million hectares) and Africa (1.1 million hectares). Although the relative importance of some regions changes in time due to shifts in production, in general there is an upward trend in total hectares of organic agricultural land resulting from hiking demand for organic foods, as can be seen in Figure 2.

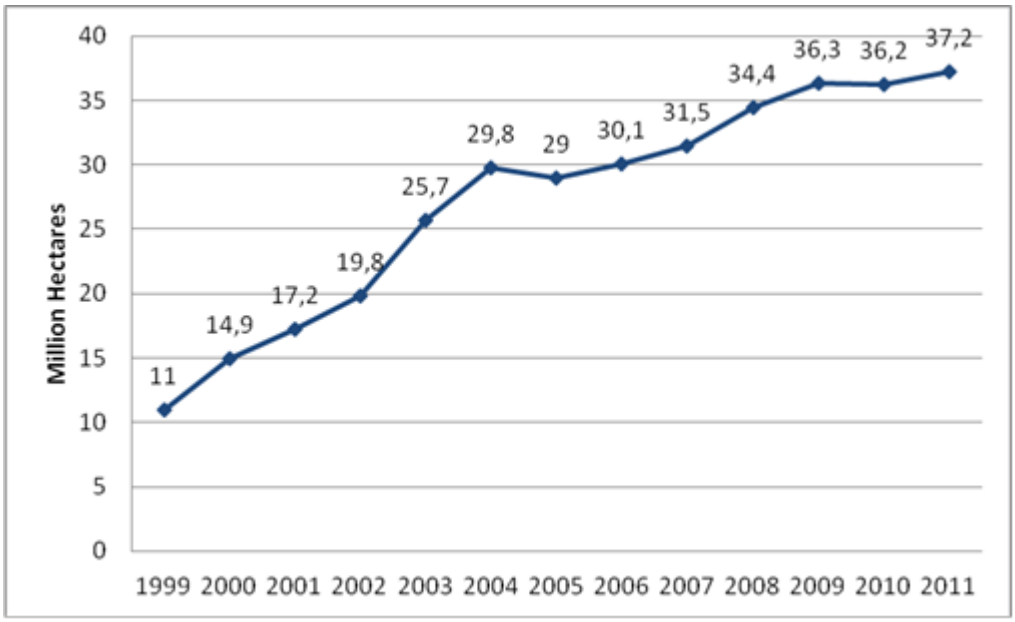

Figure 2. Development of Organic Agricultural Land in the World (1999-2011) Source: Organic Agriculture Worldwide (FiBL-IFOAM Survey 2013), p.26

Starting to produce also for domestic markets since early 2000s, Turkey has an increasing path of production in organic sector as mentioned above; and increased in both number of producers, products and hectares of land (Demiryürek, 2004).

Strengths of Turkey in organic agriculture weigh far more than the weaknesses. First of all, since the organic agriculture is labor intensive, Turkey is suitable with the abundant labor force and rather traditional methods of production. The young population also promotes this situation further. The geographical location of Turkey is also very strategic that blesses Turkey with two advantages: experiencing the four seasons offers a wide product range that could be produced under natural conditions, and proximity to EU markets provides the advantage of access to mature markets where the producers may make substantial profits. Furthermore, Turkey has competitive advantage in some products such as nut and fig. However, at the same time, there are some weaknesses that prevent faster growth of Turkey in organic food production. Small sized and divided cultivation lands, problems with cooperation and agricultural organization, weak database, absence of strategic planning in organic agricultural practices, limited number of studies and restricted R&D investments are the main problems preventing further growth of Turkey in organic agriculture (Nardalı, 2010). In Özbilge (2007) it is told that although the EU countries have determined a union-wide action plan since 2004, Turkey does not even have a national plan as of 2007.

Although the share of land area devoted to organic agriculture in percentages (1.8%) is not high in Turkey according to the results of FiBL-IFOAM Survey, 2013 (Willer and Lernoud, 2013) -especially when compared with ten countries having more than 10% organic agricultural land area and fifteen countries having between 5-10% organic agricultural lands of total agricultural lands- there is a huge growth in the volume of organic agricultural lands. Turkey is among the ten countries with the highest increase of organic agricultural land following China, India, Spain, Canada, France, Poland, Russian Federation and Kazakhstan as can be seen in Figure 3. The increase in hectares of land can particularly be devoted to production agreements conducted with large firms in order to decrease the costs of control and certification and thereby encourage the producers to switch to organic production (Nardali, 2010).

Besides this growth in organic agricultural land, Turkey contains a substantial number of organic producers. It is ranked as the sixth in the world as can be seen in Figure 4. However, as mentioned before, most of the production goes to foreign consumers, especially in EU (Olhan et al., 2005). Contrary to its success in production side, Turkey lags behind other countries in domestic consumption. On consumption side, merely seven countries make up the 80% of total organic food sales: United States of America (44%), Germany (14%), France (8%), Canada (4%), United Kingdom (4%), Italy (3%), and Switzerland (3%). The consumption of the rest of the world is only 20% of the total organic food sales and remains marginal.

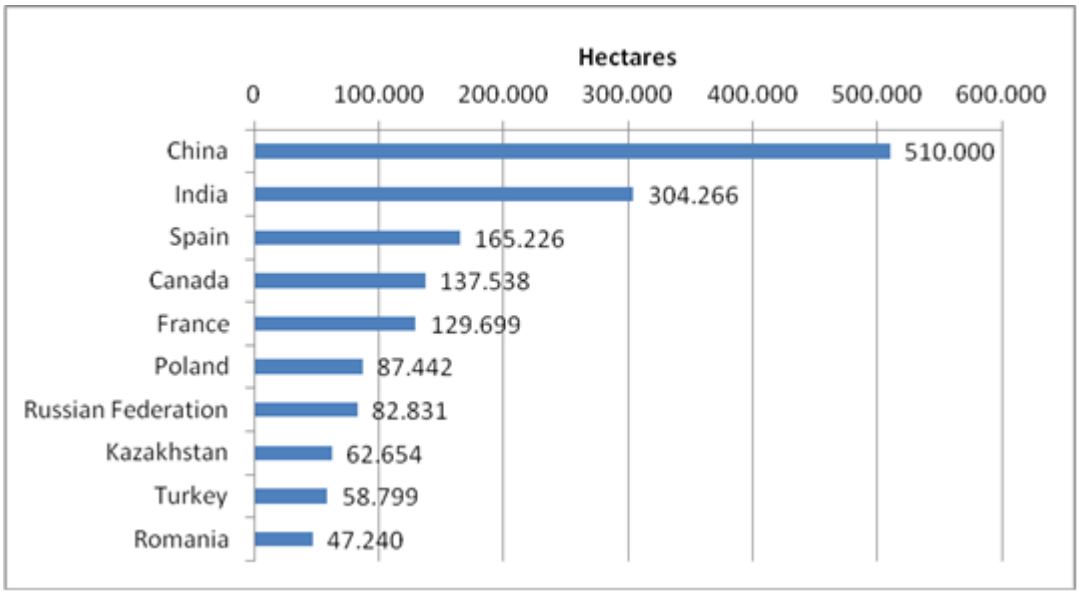

Figure 3. The Ten Countries with the Highest Increase of Organic Agricultural Land 2010-2011 (in hectares) Source: Organic Agriculture Worldwide (FiBL-IFOAM Survey 2013), p.29

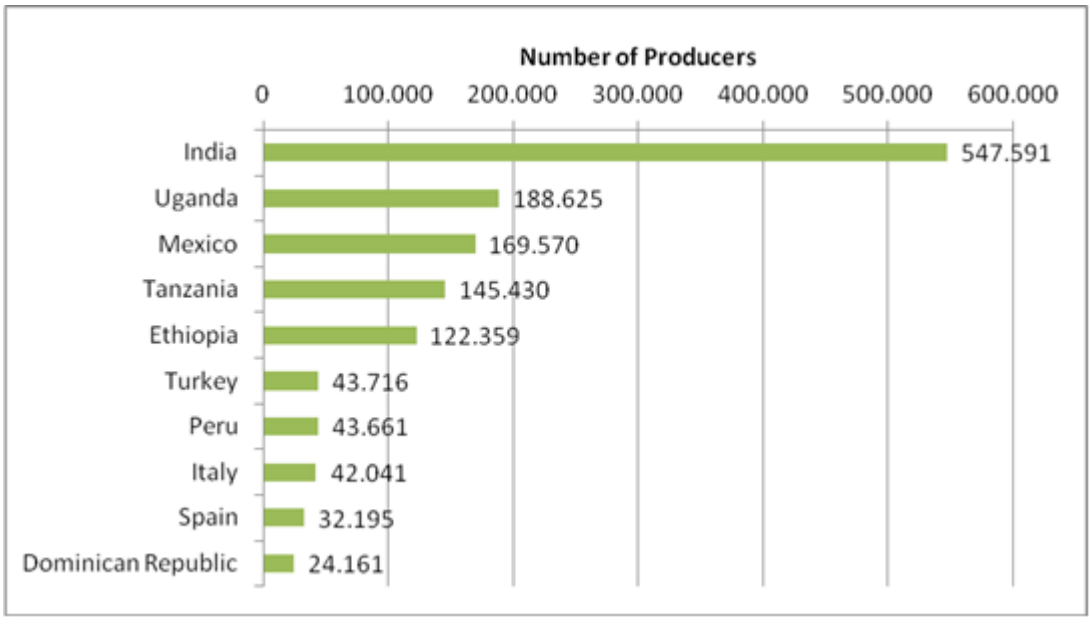

Figure 4. The Ten Countries with the Largest Numbers of Organic Producers 2011 Source: Organic Agriculture Worldwide (FiBL-IFOAM Survey 2013), p.35

According to Nardalı (2010), the low consumption in domestic market is related to both demand and supply side problems. On the demand side, inadequate knowledge and consciousness level of consumers about organic foods, deficiencies in existing organic products in terms of marketing issues such as packaging and labeling, low income level per capita, high organic food prices and price differences between organic and conventional products, trust issues about food and food safety are considered as the basic problems. It is also mentioned in study by Özbilge (2007) that people do not know the distinctive features, prospective benefits or harms of organic products. In addition, the variety of the products already in the market is low. On the supply side, inadequate knowledge in marketing of organic products, lack of collaboration and cooperation among producers and exporters, malfunction of distribution channels and insufficient display of organic products on shelves, unwillingness of farmers to produce organic goods since they could not capture the consumer surplus are the most important problems. The procedures required for starting the organic agriculture, for example, may detract them from initiating the business.

In addition, the nonexistence of an organic agricultural plan creates an unstable environment which also discourages farmers (Özbilge, 2007).

To sum up, organic production rises sharply as a result of high consumer demand especially for the last three decades. Particularly, by the increase of food-related health problems and awareness of the link between nutrition and some illnesses; as well as between some production methods and environmental degradation; concerns of consumers have augmented about increased use of genetically modified seeds, synthetic fertilizers and pesticides, and food additives; leading to an increase in the demand for organic products (Gil et al., 2000; Krystallis et al., 2006). Therefore, studies examining the structure of demand for organic foods, price premium that consumers want to pay and the motivations behind consuming organic foods have made their way in the literature. In the following chapter, both the international literature and studies conducted about Turkey examining the willingness to pay for organic foods and searching the motivations behind consumption decisions will take place.

CHAPTER 2

LITERATURE REVIEW

2.1. Studies Related to WTP for Organic Foods

Most of the studies in the literature try to find willingness to pay (WTP) for organic products with respect to socio-demographic profile of respondents: age, gender, income and education level, presence of children in the family, household size etc. Among these variables, gender may be a factor affecting WTP; generally women are more inclined to give higher prices for organic products (Gil et al., 2000; Govindasamy and Italia, 1999; Sakagami and Haas, 2012; Van Doorn and Verhoef, 2011). One contrasting example is in Donaghy et al. (2003) according to which men are more likely to buy organic tomatoes than women in Australia. One interesting study belongs to Urena et al. (2007) which investigates the WTP differences for males and females by taking into account habits in lifestyles (exercising regularly, diet, balance between work and private time, product preferences etc.) and attitudes toward environment (thoughts about man-made activities in the environment) of men and women separately. The results also reveal that the men are willing to pay more for organic foods opposed to most of the studies in the literature. The effect of education on WTP for organic foods is ambiguous. Although a positive relationship is expected between price premium and education level with the exception of certain levels of education (Batte et al, 2007; Bernard and Gifford; 2006; Dettmann and Dimitri, 2010), in some studies WTP is negatively related with the education level (Van Doorn and Verhoef, 2011; Bernard and Gifford, 2006; Gil et al, 2000; Govindasamy and Italia, 1999; Misra et al, 1991). When wealth and education are

regressed together as representing “upper-class”, this combined variable is positively related with consumers’ willingness to pay (Batte et al., 2007; Diaz et al., 2012; Krystallis et al., 2006; Loureiro and Hine, 2001). In addition, income alone is the most effective factor in determining the willingness to pay for organic products (Donaghy et al., 2003; Govindasamy and Italia, 1999; Misra et al., 1991; Rodriguez et al., 2008).

Other than the variables mentioned above, in most of the cases, age is negatively related to price premiums paid for organic products; i.e. younger people are more concerned with consuming organic food products (Dettmann and Dimitri, 2010; Govindasamy and Italia, 1999; Loureiro and Hine, 2001; Millock and Hansen, 2002; Van Doorn and Verhoef, 2011; Wang and Sun, 2003); although conflicting results may take place in the literature. In contrast to the studies in literature demonstrating a positive relation between the presence of children in the family and the price premium for organic products (Batte et al., 2007; Bernard and Gifford, 2006; Huang, 1996); Loureiro and Hine (2001) claim a negative relationship between these two variables. In addition, increase in household size decreases the price premium paid for organic foods (Govindasamy and Italia, 1999; Wang and Sun, 2003). However, in some of the studies, the effect of socio-demographic variables is weak or not influential at all (Batte et al., 2007; Bernard and Gifford, 2006; Krystallis and Chryssohoidis, 2005). To sum up, the general profile of organic food consumers are young females and households with children, especially from high level of income and education groups.

Besides socio-demographic characteristics, some of the researchers try to explain the willingness to pay for organic foods with product-specific characteristics (freshness, locality, brand, production method etc.), individual motives (environmental concerns, health concerns, animal welfare, etc.), or purchasing habits (consumption frequency, availability, prior consumptions etc.). For example, in Loureiro and Hine (2001), freshness of the potato comes to forefront as an important factor affecting willingness to pay for consumers in Colorado. Donaghy et al. (2003), in their study for Australia, examine the preferences for organically

produced foods versus genetically modified, and conventionally produced foods specifically for tomato, steak and milk. Rodriguez et al. (2008) claim for Argentina that the willingness to pay for organic foods is related to prior consumption of organic foods, their availability in the market, health perceptions of people about hormone and pesticide use, regulations and the like. In Batte et al. (2007) it is expected that respondents who have higher health concerns are willing to pay more for the organic products. It is true to some extent that these people give more price premium for products having organic content between 70%-95%. However, for products with an organic content of more than 95% the WTP of people who have higher risk concerns are no different than the ones who have lower health risk concerns. Consumers who are worried more about environment pay a higher price premium for organic products. On the other hand, health perceptions are found to be unrelated to WTP in the study of Van Doorn and Verhoef (2011). We can give the study of Donaghy et al. (2003) as an example to individual motives. Improvements in animal welfare and environmental conditions can be given as examples for the motivations that are positively related to the willingness to pay for organic steak. Besides these, membership of an environmental organization or animal welfare organization increases the likelihood of choosing the organic version of the same product. Previous consumption of organic foods also makes consumers more familiar with the organic food resulting in an increase in the likelihood of choosing organic steak and tomatoes.

The literature also includes studies differentiating the consumer types according to several criteria in order to generalize the behavior among consumer categories. Krystallis et al. (2008) divide consumers into categories as the “unaware”, “aware non-buyers”, and “(aware) buyers” based on frequency of their purchase and their awareness of organic foods. Although there is a high revealed response rate for awareness of organic food, most of the respondents could not know the accurate definition of the organic production provided in the survey. Hamzaoui-Essoussi and Zahaf (2012) concentrate on consumers’ lifestyles focusing on their pro-environmental orientations, support for the local economy, and country of origin

besides product specific characteristics and socio-demographic profile of the respondents. After classifying consumers as regular organic food (OF) buyers (who consume more than once a month) and non-regular OF buyers (who consume at most once a month) depending on their usage rate, they provided another category based on a combination of usage rate, lifestyle and reasons to buy OF. According to this categorization, three classes of consumers emerge: true OF consumers (TOFC), sporadic OF consumers (SOFC) and inexperienced OF consumers (IOFC). Among them, only TOFC are "principle oriented"; i.e. they do not consume OF only for health purposes but also care about environment, and want to help the local economy by giving priority to the locality of the products while other groups consume organic foods with "egocentric motives". These groups care more about health, taste and freshness rather than impact on environment or local economy. The WTP of the group "TOFC" for organic foods is higher than other groups.

Batte et al. (2007) categorize organic food consumers according to their shopping places and claim that the WTP premium differs among the consumers based on whether they are traditional grocery shoppers or specialty grocery shoppers, latter willing to pay more than the former. Gil et al. (2000) also group consumers by considering their lifestyles and concerns about organic foods and the environment as well as the socioeconomic characteristics. The criteria for the characterization are natural food consumption (consumption of fresh fruits and vegetables), life balance (interest in keeping work and private life in balance), health care (practicing sports, following a natural diet, regular check-ups), and Mediterranean diet (high consumption of fruits, and a moderate consumption of meat). Based on this categorization, the WTP for potential and actual consumers are very close to each other for all products, except that a group of consumers do not have interest in consuming organic foods, and are not at all willing to pay positive premiums except eggs (10%). Diaz et al. (2012) conduct a two-step clustering of the consumer types. The first classification is based on the organic food consumption (frequency, willingness to buy, prior OF consumption) while the second is based on knowledge about organic food production and logo identification. The resulting

three classes, “non-consumers/little knowledge”, “habitual consumers/well-informed”, and “occasional consumers/well-informed” reflect the knowledge of the consumers about organic foods together with the frequency of purchase. Second classification is made according to the socio-demographic variables. The authors find a significant relationship between the lower income and education level; and between the consumption of OF and low levels of knowledge. The mean WTP for all consumer types is 45.29%. When a comparison is made among classes, it is seen that the consumers who have higher knowledge about OF, and easy access to OF are willing to pay more than the other consumer types.

Different studies in the literature show that the price premiums paid by the consumers for organic foods also vary with the country, product and the time it is conducted. Different market conditions such as availability and maturity; and different samples of respondents in the country affect the findings. In Krystallis et al. (2008)’s study for Greece, the price lags behind availability as a factor that affects WTP for organic foods showing that Greece has a relatively mature organic food market. The price premiums range from 55% (for wine from organic grapes) to 100% (for oranges) for the elements of Greek diet. Millock and Hansen (2002) conduct a study for Denmark, a mature organic food market, where supplies of organic foods are stable, people trust labeling and certification programs, and finally have low price premiums in organic market. The price premiums they find for milk, potatoes, rye bread and minced beef are 59%, 48%, 51% and 41%, respectively. In their study for Austria, Sakagami and Haas (2012) conduct a comparative study by using both choice experiment and contingent valuation methods. The willingness to pay for organic vegetables is about 36%-50% for choice experiment and 34% of the base price for contingent valuation study. In the study of Hamzaoui-Essoussi and Zahaf (2012), the average WTP regardless of the consumer categories are 45% for Canada. In their study for Spain, which is the second among the European countries in terms of hectares devoted to organic product cultivation, Diaz et al. (2012) set forth that the average price premium for organic tomatoes is about 45%, although it differs among consumer categories of having different knowledge and consumption

frequency. In a study for Chile (Cerda et al., 2012), a great number of respondents are willing to pay an extra premium of about 130 Chilean pesos for organic apples.

In study of Urena et al. (2007) for Spain which has a lower production and consumption compared to other EU countries, the WTP for different products are as follows for males and females, respectively: citrus and other fruit (17.0%; 17.5%), vegetables and tubers (16.5%; 14.7%), and dried fruits and nuts (6.0%; 0.0%). Van Doorn and Verhoef (2011) examine the organic products under two categories: vice and virtue products. They identify vices ("wants") as the products that give pleasure in short term but may have negative consequences in the future; while virtues ("shoulds") may be less attractive in immediate future but long term negative consequences are less than vices. This study for the Netherlands (van Doorn and Verhoef, 2011) put forward that willingness to pay an extra price varies from 30% to 60% for a variety of organic vice products (soft drink, chocolate, coffee and beer) and a variety of virtue products (jam, yogurt, rice and margarine) with organic vice foods receive more price premium than organic virtue foods. Also, one can understand the product specific WTP by looking at each products' price premium in the study of Rodriguez et al. (2008). Price premiums vary to a great extent according to the product type available in Argentinean organic market: regular milk (13.66%), leafy vegetables (83.87%), whole wheat flour (6.15%), fresh chicken (25.15%), and aromatic herbs (201.33%). For milk, leafy vegetables and fresh chicken, availability in the market is one of the most important factors affecting their willingness to pay.

When considered in time dimension, the initial studies concentrate more on WTP for safer products in general rather than only organic-attributes. In an earlier study by Misra et al. (1991), more than half of the respondents (54%) either refuse to pay a higher price for organic and pesticide-free food or they are not sure about paying a higher price. Also, among the respondents who are willing to pay an extra amount, 87% are willing to pay only up to 10% more. The study conducted by Huang (1996) tries to understand consumer preferences for organically grown products and acceptance of sensory defects such as insect holes, blemishes and soft spots that generally exist in organic foods. The results reveal that most of the respondents

(61%) prefer organic foods over conventionally produced ones. Concerns about nutritional facts, use of pesticides and tests of foods for residue-free attribute are the factors affecting willingness to pay positively. Also Govindasamy and Italia (1999) focus on the organic foods in terms of reduced pesticide use. The results reveal that most of the respondents are inclined to give a 10% price premium depending on several socio-demographic factors. Loureiro and Hine (2001) find WTP for organic potato in Colorado as only about 3% more that of the regular potato.

Therefore, considering the studies reviewed above, there is not a clear trend in demand and WTP for organic foods in time. The organic markets in different countries have matured as time goes by, the land area devoted to organic agriculture as well as demand for organic foods have increased. However, still there are differences between countries and between time periods such as the structure of demand and maturity level of the markets which make the comparison more comprehensive.

In terms of the methods used, the studies in the literature also differentiate. The demand for products with different attributes and the willingness to pay for these products can be evaluated by using either stated or revealed preference techniques which will be explained in detail in section 3.2. In our case -the demand for organic foods- stated preference methods are more suitable than revealed preference methods since the organic food is a blooming sector, and the markets in most of the countries are not complete and mature (Diaz et al., 2010), while the revealed preference methods require real market data.

Among stated preference methods, two of them comes to the forefront and intensively applied in various subfields of microeconomics such as health economics, environmental economics, transportation economics and agricultural economics. These are choice experiment (CE) and contingent valuation (CVM). In CVM, the respondent is asked his/her WTP for a specified product(s) by using different bidding mechanisms. CE includes choice among a bundle of goods possessing different levels of the same attributes. Being a little bit different in terms

of task and the sample size, EA requires a smaller sample size but with more involvement of the respondents in the experiment (George, 2010). In this section we mainly cover studies aiming to find WTP for organic foods by using contingent valuation.

The contingent valuation method has been used in the evaluation of environmental goods due to ease of application, efficiency and convenience to measure the WTP for a change in a specific amenity (Cerda et al., 2010; Batte et al., 2007). Diaz et al. (2010) explain that although the markets and prices existed for organic foods, still they prefer to use the contingent valuation by creating a hypothetical market since the consumers are unaware of organic products or have misperceptions about them. Gil et al. (2000) also support this point by stating that the markets are weak and availability is not adequate. The contingent valuation includes information provision of the hypothetical market environment with a question for pricing of the specified goods. This pricing instrument has taken several different forms through the development process of the methodology which will be explained in the following chapter.

However, in time, the efficiency of the method has increased and the contingent valuation methodology has become highly used in several branches of economics with its advantages in application (Boxall et al., 1996). Armağan and Özdoğan (2005), Hamzaoui-Essoussi and Zahaf (2012), Millock and Hansen (2002), Sakagami and Haas (2012), Van Doorn and Verhoef (2011) utilize open ended contingent valuation in their study. It is the most frequently used format among different contingent valuation methods for two reasons. It is incentive-compatible, and also it is easy to make estimation by using simple logit or probit models (Lusk and Hudson, 2004). When we look at the latest studies conducted with open ended CV, there is not a clear trend in choosing the sample size. It depends on whether the researcher choose to conduct the surveys by e-mail, as an online panel, or face-to-face. Also, it is decided depending on the size of the country or city. For example, Van Doorn and Verhoef (2011) conduct their surveys on 709 respondents among Dutch consumers as an online panel. 375 of the surveys belong to virtue foods and

334 of them belong to vice foods. The study reveals that the WTP varies from 30% to 60% for organic virtue and vice foods. Hamzaoui-Essoussi and Zahaf (2012) prefer to conduct face-to-face surveys with 324 respondents in Canada. Their findings show that the average WTP for organic foods are 45%. Finally, in their study Sakagami and Haas (2012) collect data by a web-survey with 200 people. It is found that people are ready to pay for organic vegetables 36%-50% more of the base price in Austria.

Batte et al. (2005), Krystallis and Chryssohoidis (2005), Loureiro and Hine (2001), and Misra et al (1990) prefer to use payment card format. Payment card approach is one of the formats of CVM highly utilized in agribusiness economics (Lusk and Hudson, 2004). Although the payment card format offers the respondents a wide range of price intervals, and capture the WTP in terms of ranges; the starting point and ranges may have a bias on respondents (Venkatachalam, 2003). Krystallis and Chryssohoidis (2005) in their study for Athens, Greece conduct face-to-face surveys with 164 people; and they find a U-shaped WTP trend differing between 45% and 120%. Again Batte et al. (2005) conduct face-to-face surveys with 102 shoppers in different groceries in Ohio, USA. The WTP premium differs according to the organic content of the foods and the consumer types. The close ended question format also has different types as single-bounded, one and a half bounded and double bounded. Cerda et al (2010) and Rodriguez et al. (2008) use single bounded contingent valuation while Diaz et al (2010) and Gil et al (2005) utilize dichotomous choice contingent valuation format with a follow up question asking maximum WTP. The single bounded approach which is known as "take it or leave it approach" is also incentive compatible and reflects the market environment well. However, it may not work in cases where consumers are not familiar with the good and do not have any idea about the pricing (Venkatachalam, 2003). Cerda et al (2010) collect data by conducting face-to-face surveys with 378 apple consumers in Talca, Chile. However, the WTP figures are not stated in percentages so do not allow a comparison. Finally, in their study, Diaz et al. (2010) elicit data from 361

consumers from two different regions of Spain. The respondents on average are willing to pay for organic tomatoes about 45% more than the conventional tomatoes.

In our study, double bounded dichotomous choice contingent valuation is chosen; a developed version of the single bounded format. This involves asking two consecutive questions to the respondent, where the second one is conditional on the first response. Although it is harder to apply this method econometric terms, it is more efficient than the single bounded approach and is also incentive compatible (Venkatachalam, 2003). In the following chapter, the evaluation techniques will be explained in more detail. Also, in order to capture a meaningful data set, the sample size is determined to be about 300 respondents for each case.

2.2. The Studies Related to WTP for Organic Foods in Turkey

The studies about organic foods at the academic level are very limited in number for Turkey, and most of them are qualitative rather than being quantitative. Therefore, quantitative studies are examined in this part of the study to provide a background for both the structure of the Turkish organic food market and consumer demand.

The study by Armağan and Özdoğan (2005) is carried out in Aydın with 384 households in 2003. As a result of an open ended question and probit analysis, the study estimates a 30% price premium for consumption of ecological chicken meat and egg. In terms of consumption patterns and socio-economic characteristics, it can be seen that people having knowledge about ecological products belong to higher income classes. As the income and education level increase, people tend to consume more of those ecological products. The most important reasons for consuming ecological products are health and taste concerns besides food safety. Price is also effective on demand for organic chicken meat. However, it comes after health and taste concerns and is often considered by the lower income groups.

In their study, Akgüngör et al. (2007) try to present the consumer preferences for labeled organic foods in two metropolitan cities of Turkey: İstanbul and İzmir. They carry out a survey with 202 people in total to elicit consumers' willingness to pay and the factors influencing their decisions. While extracting price premium, contingent valuation methodology is used to simulate real purchasing behavior. Tomato is selected as the product which participants are made to choose among labeled and not labeled alternatives focusing on pesticide-free attribute under different prices. The results of the probit model reveal that education, income and age are positively related with organic awareness and knowledge. Education and income are also significant and positively related with WTP, and the sample of consumers is ready to pay up to 36% price premium for the labeled tomato. Also, the participants perceive organic products better than conventional counterparts in terms of nutritional content, presence of artificial ingredients and chemical residues.

Göktolga and Esengün (2009) focus on the factors determining consumers' willingness to pay for non-GM products in their study. Since being organic is a broader concept and also requires a product to be non-GM, we include this study in our survey. Tomato is again used as the product to be analyzed in the study. The data is gathered by utilizing face-to-face CV surveys conducted with 262 people in 9 neighborhoods of Tokat. Econometric model reveals that size of the family, monthly income, monthly food expenditures of households and concern levels of consumers about the issue (gene transfer, antibiotic resistance, reduced biodiversity etc.) are the factors affecting willingness to pay. On the other hand, gender, age, and level of education are not having an effect on WTP. As opposed to other studies, income level is found to be negatively related to consumer willingness to pay. According to the authors, this might be due to people's desire to belong to a higher-income group to try and adopt new technologies.

Another study in Adana (Budak et al., 2006) about consumer willingness to pay for organic sea bass finds that being young, married, educated, and not having children under age of 10 are the main characteristics of organic food consumers. In addition, econometric results suggest that income, concerns about food safety, being

the primary shopper of the household, prior consumption of seafood, all affect the willingness to pay for organic sea bass positively. In this study, the data are elicited by a face-to-face survey with 253 consumers in several supermarkets. Contingent valuation method with payment card format is used in order to elicit WTP. It is indicated that 91.5% of the respondents are willing to pay a premium for organic sea bass; specifically about 65% among them is ready to pay between 11-30% more.

A similar study is conducted by Gündüz and Bayramoğlu (2011) in order to find consumer willingness to pay for organically raised chicken and explore the socioeconomic and attitude factors influencing WTP in Samsun. In order to gather data on WTP, CV method is used with payment card format and open-ended questions. Since price premiums are presented in ordinal ranking, the ordered probit model is used. The survey is conducted on 150 people in Samsun, and most of the respondents are willing to pay 6% to 10% more for consuming organic chicken; while 1/5 of the consumers are not willing to pay any money at all. Among socio-economic attributes, income and education levels; and among attitude variables previous consumption of chicken are found to be important variables that influence the willingness to pay positively.

Ergin and Özsaçmacı (2010) try to get an overall understanding of Turkish consumers' perceptions and consumption of organic foods. In addition, they aim to find if there is any difference between preferences and consumption patterns of different regions in Turkey. For this reason, they conduct a total of 215 surveys in urban İstanbul and Ankara, as representative cities. According to the results, four factors; namely, consumers' trust, health considerations, environmental benefits and availability are found to be effective on frequency of organic food purchase. In addition, while it is said that people in different districts are motivated by different factors; no significant relationship between frequency of purchase versus age and gender is found.

As it is mentioned before, the empirical studies examining organic food demand and price premium in Turkey are limited. By the increase in the number of such

studies, we believe that both producers and retailers will assess demand for organic foods more accurately and manage marketing strategies more effectively. The purpose of this study is to address the questions how consumers perceive organic foods, how much they are willing to pay for such products, and to provide the necessary information. Results of the study may provide insights to characteristics of organic food consumers, and the price premium for consuming organic chicken and organic milk.

In this study, double bounded dichotomous choice method is utilized. It reflects market behavior better than the other methods and also provides more efficient results with small sample sizes. Our questionnaire, which takes place in Appendix I, includes more detailed questions in relation to socio-demographic issues. Using double bounded dichotomous choice method together with detailed survey questions on the socio-demographic characteristics of the respondents, we aim to have a more accurate measure of WTP compared to previous studies done for Turkish organic food market. In the next section, the methodology used for valuation of environmental resources and the specific method used in this study is explained in detail.

This study is conducted in Kuşadası due to the reasons explained below. Kuşadası is a city located at the west coast of Turkey, a coastal and touristic town in northwest of Aydın. The city is settled on 340 km^2 and according to the 2011 population count; there are 88,464 people in the city (South Aegean Development Agency City Report, 2012). Due to the factors like proximity to the İzmir Adnan Menderes Airport, international port where high tonnage ships can come into, and an international marina, Kuşadası has become an important touristic city. Besides these, the city also constitutes an important place in ecological activities of Turkey. It comprises the Mediterranean seal habitat, Dilek Peninsula National Park which is a life space for lots of species, and Big Menderes Delta, all recorded in international literature (Aydın-Muğla-Denizli Planning Region: Environmental Planning Report, 2010). It comes to people's minds with its beautiful scenery, especially sea tourism, and Pigeon Island besides the surrounding ancient places such as Şirince, Ephesus,

and Virgin Mary. However, with its weather conditions –hot in summers, warm and rainy in winters- and fertile lands in villages, Kuşadası is also an agricultural town with exclusive products such as peach, cherry, fig, citrus, olive and grapes. Especially in Kirazlı village, organic agriculture and ecologic tourism activities are supported by the state (Aydın-Muğla-Denizli Planning Region: Environmental Planning Report, 2010). After the use of lands that belong to Treasury and the idle lands, the areas devoted to agriculture have also increased. The reason we have chosen Kuşadası is that it is one of the first places organic products are presented to consumers; it is where the organic production open into the domestic markets. Also, besides production in natural conditions, wild herbs constitute an important part of the residents' diet. There is a wide range of wild herbs that is either collected by local people or sold in local markets. So, we expect that the people are a bit more conscious in terms of organic production since they are acquainted with the naturally grown products. One more expectation is that they may be willing to pay higher premiums for consuming organic foods. In the next sections, we will present the findings about the perceptions of people in Kuşadası about organic foods in general, and their WTP for specified organic products.

CHAPTER 3

METHODOLOGY

3.1. A General Background about Environmental Valuation Methods

Nature provides mankind the vital resources for living, either directly or indirectly. These vary from biogeochemical cycles such as nitrogen cycle, oxygen cycle, carbon cycle, water cycle etc., raw materials for consumer goods, energy required for production, food and shelter, areas for recreation and relaxation (Tietenberg, 2001). However, value of most of the resources provided by the nature goes uncounted due to market failures. Environmental and natural resource economics incorporates the pecuniary value of these resources by using various methods.

As stated in Dixon (2008), total economic value can be divided into two as use value and non-use value or passive-use value. Direct use, indirect use and option values are the types of use value; while bequest and existence values are counted as non-use values. These components of economic value are shown in Figure 5. Use values arise with direct or indirect physical interaction with the resource, but for non-use values a physical interaction with the resource is not required (Randall, 1993). People might also generate benefits by transferring the resources to future generations or by the mere existence of the resource, which could be defined as bequest and existence values, respectively. While some of these values can be easily elicited through market data, the values such as bequest and existence values are hard to find since there is no revealed market transaction data readily available (Arrow et al., 1993). Monetary valuation methods can be utilized in finding these

use and non-use values of environmental resources and amenities which do not have a market. Expanding scope in subject and application areas, these methods also started to be used in health economics, transportation economics, and agricultural economics. In recent years, in valuing different attributes of food products which already have markets, though immature or not complete, these valuation techniques have also been utilized (Diaz et al., 2012; Gil et al., 2000; Cameron and James, 1986). These attributes are varying such as having a quality label, being environmentally friendly, pesticide-free, genetically modified or organic.

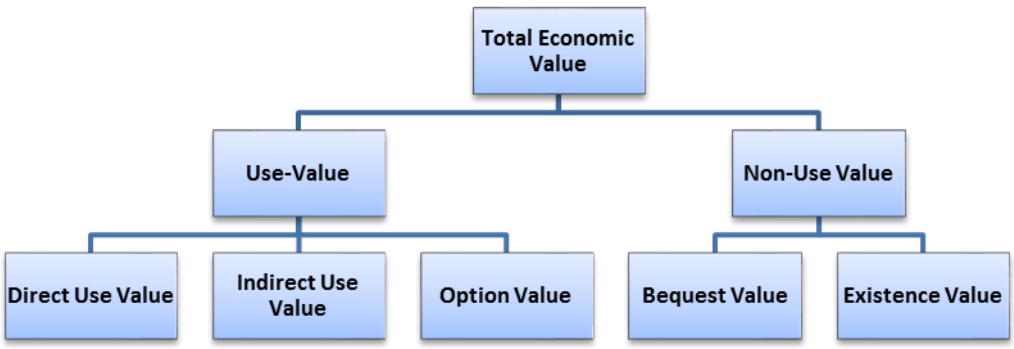

Figure 5. Components of Total Economic Value Source: Environmental Valuation: Challenges and Practices (Dixon, 2008), p.3

Some of the widely used and important environmental valuation techniques are travel cost method (TCM), hedonic pricing method (HP), contingent valuation method (CVM) and choice experiment method (CE). While travel cost method and hedonic pricing method are classified under revealed preference methods (RP), contingent valuation and choice experiment can be grouped under stated preference methods (SP). Revealed preference methods try to estimate the underlying value of an amenity by observing the market behavior of individuals for a marketed good or service related to this amenity. TCM infers how much money people pay for enjoying an environmental site by taking travel costs (both out-of-pocket costs and

costs incurred by wasted time) as the proxy for price. HP investigates the revealed behavior of individuals for directly-purchased goods, especially houses with environmental attributes; clean air, scenic view, proximity to the beach and the like, along with other characteristics of the good and infers the value of the specific attribute (SAB Committee Report on Revealed Preference Methods, 2009). In contrast, stated preference methods make inference from answers to survey questions by creating a hypothetical market. While CVM directly elicit the willingness to pay for the specified good and scenario with the help of a well-structured survey, CE presents individuals a bundle of goods with some attributes and expects them to make a choice among the bundles (SAB Committee Report on Stated Preference Methods, 2009).

The strength of stated preference methods lies in their ability to measure non-use values (Hoevenagel, 1994). Since the non-use values are not revealed in the market, the non-use values; existence value and bequest value, cannot be found by using revealed preference methods. Also, it is considered that non-use values constitute an important part of total economic value; not counting them would result in understatement of costs to environment, misallocations and inefficient decisions (Randall, 1993). When the other stated preference methods are considered, the contingent valuation method is one step ahead due to broader range of application, reliability, and ability to measure non-use values, creating its own data set and eliminating the problem of conflict of existing data with the required data (Arrow et al., 1993; Dixon, 2008; Portney, 1994; Hoevenagel, 1994). For these reasons, the CVM is preferred in this study.

3.2. Contingent Valuation Method

As also explained in Hoyos and Mariel (2010), among the stated preference methods, CVM comes to forefront due to ease of application, flexibility and long years of improvement on methodology. First proposed by Bowen and Ciriacy-

Wantrup (Hoyos and Mariel, 2010) in 1940s, CVM with a direct questionnaire was thought to be the best option to capture individuals' preferences, although some economists oppose that based on the free-riding problem and the responses not revealing real market behavior. Early in 1960s, the first CV survey was conducted by Davis in order to elicit the recreational value of Maine Woods.

In early 1980s, the method is theoretically formulated by Hanemann (1984), and Cameron and James (1987) with tiny differences. Then it is accepted by some states in USA as the environmental valuation tool. Exxon Valdez oil spill in Alaska, which occurred on 24 March 1989, constitutes a milestone in the history of the CVM. This event has triggered the developments on the model after the state of Alaska want to impute the costs of the accident, both direct use values and passive use values, on the firm by using CVM; and then the company's litigation of the Alaska State as a counter attack in order to investigate the reliability of the CVM (Hoyos and Mariel, 2010; Portney, 1994). Following these, attitude of states for protecting natural resources, people's growing interest in nature, and increase in the number of reference texts provided the method to become widespread (Arrow et al., 1993; Randall, 1993; Desvousges et al., 1993).

CVM also varied over time in terms of bidding mechanisms, i.e. the way that the pricing questions are posed to the respondents. The first and the earliest elicitation method is "bidding game format". Within this format, a series of questions after a starting point price are asked: upward if the first response is "yes" and downward if the first response is "no" until it turns to a "yes". Because of the concerns raised for a biased starting point, a new mechanism is proposed called "open-ended format", asking rather a direct price without stating a starting price in the survey. Due to high rate of "don't know" responses, another method was developed: "payment card method". The respondents are presented with an array of prices and they are expected to choose one of them representing their maximum willingness to pay. The lastly used method is single bounded closed-ended question format. It tries to put an upper or lower limit to the willingness to pay by giving a simple "yes" or "no" answer to the specified and randomly assigned amount rather than finding the exact

willingness to pay. Although it was thought that open-ended format fits to the market behavior and purchasing decision well, the flaw of the method was its limited knowledge of consumer willingness to pay (i.e. only above or beyond a specified amount), and the need for a larger sample for more accurate results. In order to develop the format, a second discrete choice question was proposed conditional on the first one; called "double-bounded dichotomous choice format". If the response to the first question is "yes", it is recurred with a higher monetary amount; and if the response is "no", the amount is decreased by a certain amount (Hoyos and Mariel, 2010). By asking the conditional question, the willingness to pay of consumers could be limited both with an upper and a lower limit (Carson et al, 2001; Cameron and James, 1986); and this way of bidding is considered more efficient with a smaller sample size than the single bounded model (Hanemann et al., 1991).

CVM technique is criticized for suffering from several drawbacks. First of all, it is said that people have to make a valuation about a good or service they are not familiar with. Also, the survey may be short of providing information about a good that respondents do not have prior information; or respondents may use their prior information in a wrong way (Desvousges, 1993; Hoevenagel, 1994). In effect, their valuation will not be rational and realistic. Another criticism is that, since these surveys are not binding and are hypothetical, people might exaggerate their bids. Also, rather than being rational in economic terms, they may give emotional answers to the questions which again results in overstated estimates of WTP (Desvousges, 1993). One more point of criticism causing bias in contingent valuation is protest responses. That is, people might protest the subject for several reasons; they think that it is unethical to charge price for environmental goods or services; or they should be provided free of charge. They reveal their objection by giving invalid answers, not providing answers, or stating zero bids (Halstead et al., 1992). However, some agree that the problems faced in contingent valuation technique are eliminated with recent and more comprehensive studies. This method provides the

survey respondents with a hypothetical scenario close to real market; and gives the researchers reliable results (Cameron and James, 1986).

3.3. Methodology for Estimation of Willingness to Pay for Organic Foods

The contingent valuation method is generally used for the goods that do not have markets, so the demand is not observable directly (Hanemann, 1994). However, it can be applied to our case when the market is not mature and the availability of the specified product is less (Gil et al., 2000). In estimating willingness to pay for consuming organic chicken and milk, double-bounded logit model is used. When the data are qualitative, rather than quantitative, the dependent variable is generally discrete. This type of data can be transformed into continuous variable and analyzed by using either one of the link models: the logit model or the probit model. Logit model enables us to transform categorical data into quantitative data, and gives the probability for the odds. Asymptotic characteristics of the model yield the predicted probability in the range of zero and one (George, 2010).

As stated by Xie and Manski (1989), when the response-based data and a binary WTP are considered to be analyzed, the choice of logit or probit model becomes trivial. Although these two models are alike, the probit model has heavier tails. As it is cited in Xie and Manski (1989), Amemiya (1985) justifies the selection of logit over probit as the logistic distribution is similar to the normal distribution function with a simpler form. Chambers and Cox (1967) in Hahn and Soyer (2005) also state that only with the observation of small sample sizes and certain extreme patterns in the binary response data, the difference in the two models could be identified. Also, since the variances are assumed to be different, the findings from these two models are not directly comparable. As a result, since it is highly used in the studies about organic foods, and more convenient as well as easy to interpret, the logistic probability function is preferred in this study. A double bounded logit model is utilized for the estimation of the willingness to pay in relation to double bounded dichotomous choice contingent valuation question.

In double bounded dichotomous choice questions, as stated in Loureiro et al. (2002), the respondent is presented with a first bid (bid1) for the good in question. Then the second bid follows contingent upon the former one; i.e. if the respondent says “yes” to the first bid, a higher bid is offered (bidh) since the respondent has a higher WTP than the first bid, and if the response to the first bid is “no” it is followed by a lower bid (bidl) since the first bid is greater than WTP. As it is mentioned before, the bid amounts to elicit WTP are determined both by considering the ongoing prices in the market and the results of the pilot survey. Five different price levels for organic chicken and four for the organic milk are offered as the first bids, then depending on this initial value, 25% upper or lower level of the initial bid is proposed.

The double bounded dichotomous choice questions either limit the range in which the true WTP lies, or sharpen the edges of the ranges; which is counted as one of the advantages of double bounded dichotomous choice contingent valuation method. As mentioned in Loureiro et al. (2002), the four possible combinations of responses to the questions are (a)”no” to both bids (nn), (b)”no” followed by a “yes” (ny), (c)”yes” followed by a “no” (yn), and (d)”yes” to both bids. According to this, the WTP falls into four regions: $(-\infty, bidl)$, $[bidl, bid1)$, $[bid1, bidh)$, or $[bidh, +\infty)$. These discrete outcomes can be listed as follows in categorical terms (Loureiro et al., 2002):

$$D = \begin{cases} 1 & WTP < bid1 \\ 2 & bidl \leq WTP < bid1 \\ 3 & bidl \leq WTP < bid1 \\ 4 & bidh \leq WTP \end{cases} \qquad [3.1]$$

In these inequalities the WTP refers to the willingness to pay of consumers for the organic chicken and milk and it is taken as a proxy to the price. The WTP function is represented as:

$$WTP = \alpha + \rho B + \lambda' z + \varepsilon \qquad [3.2]$$

As it can be seen in the study by Loureiro et al. (2002), in this equation, *B* is the ultimate bid amount that each consumer faces, z is a vector of explanatory variables (observable characteristics of the individual), ε is random variable accounting for unobservable characteristics while α, ρ and λ are unknown parameters to be estimated. As in study of Loureiro et al. (2002), the choice probabilities can be characterized by letting ε~ $G(0,\sigma^2)$; meaning that $G(0,\sigma^2)$ denotes a cumulative distribution function with zero mean and σ^2 variance. The choice probabilities are (Loureiro et al., 2002):

$$Prob(D=j) = \begin{Bmatrix} G(\tilde{\alpha} + \tilde{\rho} bidl + \tilde{\lambda}' z) \\ G(\tilde{\alpha} + \tilde{\rho} bid1 + \tilde{\lambda}' z) - G(\tilde{\alpha} + \tilde{\rho} bidl + \tilde{\lambda}' z) \\ G(\tilde{\alpha} + \tilde{\rho} bidh + \tilde{\lambda}' z) - G(\tilde{\alpha} + \tilde{\rho} bid1 + \tilde{\lambda}' z) \\ 1 - G(\tilde{\alpha} + \tilde{\rho} bidh + \tilde{\lambda}' z) \end{Bmatrix} \text{for } j = \begin{Bmatrix} 1 \\ 2 \\ 3 \\ 4 \end{Bmatrix} \qquad [3.3]$$

Estimates are obtained by using a logistic function (Double Bounded Logit Model). If we assume that the individual chooses the option which yields a higher utility based on rationality and theoretical background of Random Utility Model (RUM), the log-likelihood function takes the following form (Loureiro et al., 2002):

$$\mathrm{L} = \sum \left\{ \begin{array}{l} I_{D_{i=1}} \ln G(\tilde{\alpha} + \tilde{\rho} bidl_i + \tilde{\lambda}' z_i) \\ + I_{D_{i=2}} \ln \left[G(\tilde{\alpha} + \tilde{\rho} bid1_i + \tilde{\lambda}' z_i) - G(\tilde{\alpha} + \tilde{\rho} bidl_i + \tilde{\lambda}' z_i) \right] \\ + I_{D_{i=3}} \ln \left[G(\tilde{\alpha} + \tilde{\rho} bidh_i + \tilde{\lambda}' z_i) - G(\tilde{\alpha} + \tilde{\rho} bid1_i + \tilde{\lambda}' z_i) \right] \\ + I_{D_{i=4}} \ln \left[1 - G(\tilde{\alpha} + \tilde{\rho} bidh_i + \tilde{\lambda}' z_i) \right] \end{array} \right\} \qquad [3.4]$$

CHAPTER 4

SURVEY DESIGN AND CHARACTERISTICS OF THE DATA

4.1. Survey Design

In accordance with the aim of this research; finding the willingness to pay a price premium for consuming organic foods and the factors affecting this decision, face-to-face interviews consisting of questions about socio-demographic characteristics, consumer perceptions about food, and a hypothetical pricing scenario are utilized.

In the survey design, the rules of thumb of contingent valuation method, determined in National Oceanic and Atmospheric Administration (NOAA) Panel in 1993 by the pioneer environmental and resource economists are followed. First of all, as summarized in Portney (1994), the hypothetical scenario should provide respondents with a clear picture of the situation and the good in question to converge it to reality. To motivate the respondents well for the hypothetical market and to minimize the biases, the scenario is described in detail (Hoevenagel, 1994). In addition, generally WTP is preferred to be used as a proxy for price in valuing the specified good –organic foods in this case- rather than the willingness to accept (WTA) a compensation for keeping with the status quo (i.e. consuming conventionally produced foods in this research). This is preferred due to the exaggerated amounts when compensation is considered, since people do not pay money out-of-pocket and instead get compensation. WTP provides the researchers with more conservative price premium estimates. Also, face-to-face surveys are the most preferred and reliable way of gathering data although they are hard to apply and costly (Portney, 1994). In this study, face-to-face interview is preferred to

increase the response rate, and to provide respondents with a better understanding of the questions.

The data is compiled via a structured questionnaire. Open ended questions are not included both in order to increase the response rate, and to decrease the time required to complete the questionnaire. The questions are designed by taking previous studies into account and adopting them into Turkish demographic and consumption patterns (see Armağan and Özdoğan, 2005; Diaz et al., 2010; George, 2010; Krystallis et al., 2006). The possible explanatory socio-demographic variables which mainly aim to find the effect on consumer willingness to pay are included in the questionnaire as well as attitudes toward organic foods, motivations, knowledge and trust (Portney, 1994). Since it is considered that most of the respondents are familiar with organic foods, and also the survey consists of questions about the definition of organic foods and possible drawbacks of conventionally produced agricultural goods; no prior information is provided to respondents in order to avoid bias toward organic foods and the resulting overestimation. The survey is prepared in the way that an average consumer can understand easily and tested for determining the strengths and weaknesses. Pilot survey was conducted on 10 people; and revealed that it is a bit long to keep respondent attention in fact. It is also seen that some questions might be hard to understand. Therefore, the survey was shortened and simplified according to the feedbacks from the pilot survey. As a result, a more precisely worded questionnaire was yielded after the pre-testing process.

The final questionnaire contains three parts. The first part aims to elicit the socio-demographic profile of the respondents by asking questions related to gender, age, employment and education status, household size, number of children in the household etc. The second part is designed in order to learn consumer's opinions about several issues such as diet and health, food security and trust. In the second part, questions refer to acquaintance with the organic products, the places where the consumers buy organic foods, the damages caused by certain types of production, motivations for consuming organic foods, the sources of information on food and

trust for these sources. The third part of the questionnaire includes questions about consumption habits, hypothetical CV scenario and the double-bounded dichotomous choice question eliciting consumer willingness to pay on either organic chicken or organic cow milk. Lastly, follow-up questions are added in order to identify and exclude protest bidders from the analysis to avoid "protest bias". For the respondents who give negative responses to both of the pricing questions (no-no answer), the follow-up question is asked in order to understand the motivations behind this answer.

At the beginning of the interview process, actually three products; chicken, milk and squash, are to be investigated in order to make a comparison between animal and herbal products, as well as between processed and unprocessed foods. However, after conducting a considerable number of surveys about squash, it is realized that herbal products are weak candidates compared to animal products and extra price premium margin is very low, i.e. people are not very much willing to pay an extra amount. Therefore, squash is removed among the specified products. However, in this study, the difference between price premiums of processed and unprocessed foods can still be observed. The reason for inclusion of milk and chicken in this research is that they constitute an important part of Turkish diet. Neither of the products have many substitutes. Milk is especially thought to be vital for bone development of children and an important source of protein. Chicken is a relatively cheap source of protein, has a low-fat content compared to red meat and consumed by people belonging to very different levels of income when its price is considered. Besides these, both of these products are open to debates lasting for years. The former one was brought to the agenda several times with the issues like drawbacks of processing type and homogenization, being yielded from growth hormone-given animals, and salmonella. The latter product was even more debated than milk in relation to the issues of growth hormones given to the animals resulting in diminished slaughtering period, avian influenza and the like. With the increasing awareness, promotion and information on TV programs, people have some doubts about safety of those products readily available in the market. So, in this study, it is

aimed to get information on how much the consumers are willing to sacrifice for the organic version of these products of which they are sure about the safety.

There are nine versions of the questionnaire; five for the chicken and four for the milk. The only difference between the versions is the price level introduced to the respondents. Before the price levels are offered, a hypothetical scenario is depicted in order to visualize consumption decision and market behavior, describing two products; organic chicken versus conventional chicken, and organic milk versus conventional milk, in detail. Since there is already a market for organic foods, although immature, the prices are determined according to the ones ongoing in the market. After specifying the first bid for the organic version of the product, the second bid is increased by 25% if the respondent says "yes"; it is decreased by 25% if s/he says "no". The price intervals offered to the respondents can be seen in Table 1 ordered as lower bound, starting bid and the upper bound. Also, the answers of the respondents to each version of the first bids can be seen in Table 2 for chicken case and Table 3 for milk case.

Table 1. Price Intervals Used in the Surveys

Product	**Version A**	**Version B**	**Version C**	**Version D**	**Version E**
Chicken (per kg)	9-12-15 TL	12-16-20 TL	15-20-25 TL	18-24-30 TL	21-28-35 TL
Milk (per liter)	3-4-5 TL	4,5-6-7,5 TL	6-8-10 TL	9-12-15 TL	----

Table 2. Answers to the First Bid for Chicken Case

Response	**Version A**	**Version B**	**Version C**	**Version D**	**Version E**
No	12 (17.39%)	21 (30.88%)	20 (33.90%)	24 (43.64%)	16 (28.57%)
Yes	57 (82.61%)	47 (69.12%)	39 (66.10%)	31 (56.36%)	40 (71.43%)

Table 3. Answers to the First Bid for Milk Case

Response	Version A	Version B	Version C	Version D
No	21 (27.27%)	32 (43.84%)	39 (48.15%)	48 (64.00%)
Yes	56 (72.73%)	41 (56.16%)	42 (51.85%)	27 (36.00%)

4.2. Characteristics of the Sample

The surveys are conducted in various parts of Kuşadası to ensure that different classes of consumers are covered; e.g. higher or lower levels of income, education, gender and other socio-demographic aspects. It takes two and a half months completing the surveys to provide the required number of respondents allowing plausible data sets. The surveys are conducted with random consumer intercept approach (George, 2010) during July, August and the first two weeks of September 2013 in different neighborhoods of Kuşadası to capture different characteristics of consumers. Among the places we conducted the survey are a specialty store, local markets, supermarkets, restaurants, food courts and tea gardens. With random intercept approach, the prospective respondents are selected randomly and asked if they want to take part in the survey. After a brief introduction of the interviewer to each possible interviewee, they are told about the survey, and the study. If the person accepts to participate in the survey s/he is given the survey and told about the task they are required to fulfill (George, 2010). It is also said that s/he will be assisted during the survey when the help is needed. However, the rejection rate was high (about 30% on average), and this might be the result of unsettled survey culture in Turkey and public distrust in general.

The survey is applied to 720 people, and 40 of these surveys are eliminated due to inconsistent responses or incompleteness. Also, as mentioned before, protest responses are identified by follow-up questions and excluded from the analysis.

According to the responses to the follow up questions, there are 28 protest responses in chicken group and 39 in milk group. After the second elimination, we are left with 307 completed surveys for chicken subsample, and 306 for milk subsample.

Before examining the socio-demographic characteristics of the two sub-samples, some of the official socio-demographic characteristics of both Turkey and Kuşadası for the year 2012 are given in Table 4 for comparative analysis of our data.

Table 4. Demographic Characteristics for Kuşadası and Turkey (2012)

		Kuşadası			**Turkey**		
		Male	Female	Total	Male	Female	Total
Age Groups	0-19 years	12,203	11,495	23,698	12,965,246	12,297,485	25,262,731
	20-29 years	6,357 (17.8%)	6,510 (18.3%)	12,867 (18.0%)	6,336,676 (25.4%)	6,120,091 (24.1%)	12,456,767 (24.7%)
	30-44 years	12,057 (33.7%)	11,994 (33.8%)	24,051 (33.7%)	8,763,002 (35.1%)	8,577,162 (33.8%)	17,340,164 (34.4%)
	45-59 years	10,370 (29.0%)	10,171 (28.6%)	20,541 (28.9%)	6,124,562 (24.5%)	6,092,639 (24.0%)	12,217,201 (24.3%)
	60+ years	6,969 (19.5%)	6,869 (19.3%)	13,838 (19.4%)	3,766,682 (15.0%)	4,583,839 (18.1%)	8,350,521 (16.6%)
	Total	**47,956**	**47,039**	**94,995**	**37,956,168**	**37,671,216**	**75,627,384**
Education Levels	Illiterate	168	517	685	472.058	2,302,457	2,774,515
	Literate but not graduated from a school	521	1,145	1,666	1,095,373	2,405,469	3,500,842
	Primary School Graduate	5,538 (22.6%)	6,882 (29.4%)	12,420 (25.9%)	6,606,954 (27.8%)	8,613,074 (41.0%)	15,220,028 (34%)
	Elementary School Graduate	3,910 (16.0%)	2,722 (11.6%)	6,632 (13.8%)	4,780,129 (20.1%)	3,409,180 (16.3%)	8,189,309 (18.3%)
	Middle School Graduate	2,191 (9%)	1,775 (7.6%)	4,066 (8.5%)	1,736,233 (7.3%)	1,113,766 (5.3%)	2,849,999 (6.4%)
	High School	8,082 (32.9%)	7,677 (32.8%)	15,759 (32.8%)	6,915,202 (29.1%)	5,094,393 (24.4%)	12,009,595 (26.9%)
	College or university graduate	4,516 (18.4%)	4,148 (17.7%)	8,664 (18.1%)	3,400,307 (14.3%)	2,512,880 (12.0%)	5,913,187 (13.2%)
	Graduate Degree	212 (0.9%)	176 (0.8%)	388 (0.8%)	245,621 (1.1%)	171,120 (0.8%)	416,741 (0.9%)
	Doctoral Degree	55 (0.2%)	32 (0.1%)	87 (0.1%)	75,746 (0.3%)	46,873 (0.2%)	122,619 (0.3%)
	Unknown	1299	950	2,249	877,209	823,700	1,700,909
	Total	**26,492**	**26,024**	**52,516**	**26,204,832**	**26,493,912**	**52,698,744**

Source: http://www.tuik.gov.tr

In Table 4 (Turkish Statistical Institute, 2012) gender, age and education statistics of Kuşadası and Turkey can be seen. In order to make the structure of the data resemble to our own, and to allow a comparison among them, some groups are not included in calculation of percentages. For example, the population between the ages 0-19 is given in number in order to visualize the whole structure of the population. However, since we do not allow the participation of people under the age of 18 to the survey, this group is not included in calculations. Similarly, the same group is not included in education status calculations as well as the "illiterate", "literate but not graduated from a school" and "unknown". According to the data elicited from Turkish Statistical Institute (2012), characteristics of population between Turkey and Kuşadası show some differences. For example, as can be seen in Table 4, Kuşadası has an elder population than Turkey, the population density increase at the ages after 45. Also, in terms of education, the population of Kuşadası clusters more in two groups: high school and college/university degree.

Table 5. Characteristics of the Sample

Product	**Chicken**	**Cow milk**
Sample Size	307	306
Gender		
Male	119 (38.7%)	111 (36.3%)
Female	188 (61.3%)	195 (63.7%)
Age		
18-30	68 (22.2%)	70 (22.8%)
31-45	127 (41.4%)	128 (41.9%)
46-60	87 (28.3%)	86 (28.1%)
60+	25 (8.1%)	22 (7.2%)
Employment Status		
Employees	109 (35.5%)	113 (36.9%)
Self-employed	60 (19.5%)	57 (18.6%)
Pensioner	63 (20.5%)	65 (21.2%)
Housewife	52 (17%)	50 (16.4%)
Unemployed	10 (3.3%)	6 (2.0%)
Student	13 (4.2%)	15 (4.9%)

Table 5 (continued)

Product	Chicken	Cow Milk
Education		
Elementary	58 (18.9%)	49 (16%)
High School	82 (26.7%)	112 (36,6%)
Technical School	36 (11.7%)	39 (12,7%)
University Degree	113 (36.8%)	91 (29.8%)
Graduate	18 (5.9%)	15 (4.9%)
Household Size		
1 person	19 (6.2%)	25 (8.1%)
2 people	70 (22.8%)	57 (18.6%)
3 people	105 (34.2%)	100 (32.7%)
4 people	86 (28.0%)	97 (31.7%)
5+	27 (8.8%)	27 (8.9%)
Number of Children		
0-2 age	30 (9.8%)	30 (9.8%)
3-6 age	44 (14.3%)	35 (11.4%)
7-18 age	91 (29.6%)	105 (34.3%)
Place of Residence		
Kuşadası	263 (85.7%)	264 (86.2%)
Villages	21 (6.8%)	20 (6.6%)
Outsiders	23 (7.5%)	22 (7.2%)
Monthly Income		
0-1.500 TL	67 (21.8%)	66 (21.6%)
1.502-2.500	90 (29.3%)	86 (28.1%)
2.501-5.000	102 (33.2%)	110 (35.9%)
5.000-10.000	42 (13.7%)	38 (12.4%)
10.000+	6 (2.0%)	6 (2.0%)

The socio-demographic characteristics of our sample are summarized in Table 5 based on the questions asked in the survey which are taking place in Appendix I. Among the subsamples of milk and chicken, socio-demographic resemblances draw the attention. According to the first question on gender information (Q.1), we see that the proportions of male and female respondents are very close to each other for both of the subsamples. For chicken survey sample, 188 of the respondents are women, while 119 are men. In the case of milk, there are 195 women and 111 men. These numbers correspond to 61.3% for females and 38.7% for males for chicken

group; and 63.7% for females and 36.3% for males for milk group. Since women are generally the main shopper of the house, dominance of women in the sample size is expected in most of the studies (Bernard and Gifford, 2006; Cerda et al., 2010; Dettmann and Dimitri, 2010; Hamzaoui-Essoussi and Zahaf, 2012; Krystallis et al., 2006; Rodriguez et al., 2008; Wang and Sun, 2003). Also, they are more concerned with food issues and thus participate more actively than men (Gil et al., 2000). When the answers to the second question (Q.2) –asking the age of the respondent- taken into consideration, the distribution of the respondents according to age groups is also similar among two subsamples, and the mean ages are 42.07 and 41.3 for chicken and milk groups, respectively. The detailed breakdown of genders into four age groups can be seen in the cross-tabulation below (Table 6). However, when compared with the population of both Kuşadası and Turkey, our sample is younger. While the 60+ age group is under-represented in our sample, the ages between 30 and 45 is over-represented.

Table 6. Distribution of Age Groups According to Genders

		Age Groups				
	Gender	**18-35**	**36-45**	**46-60**	**60+**	**Total**
Chicken	Male	25 (36.7%)	49 (38.6%)	32 (36.8%)	13 (52%)	119
	Female	43 (63.3%)	78 (61.4%)	55 (63.2%)	12 (48%)	188
	Total	**68**	**127**	**87**	**25**	**307**
Milk	Male	29 (41.4%)	47 (36.7%)	27 (31.4%)	8 (36.4%)	111
	Female	41 (58.6%)	81 (63.3%)	59 (68.6%)	14 (63.6%)	195
	Total	**70**	**128**	**86**	**22**	**306**

For the third question (Q.3) eliciting information on current employment status, the largest proportion in "employment status" belongs to employees working in public or private sector in both subsamples (35.5% for chicken group and 36.9% for

milk group). It is followed by pensioners and self-employed (20.5% and 21.2% for chicken and 19.5% and 18.6% for milk subsamples) as can be seen in Table 7. Despite high participation rate of women in the survey, and low rates of female labor force participation in Turkey, our ratio of housewives is low. However, since the survey is conducted during summer, the seasonal increase in job opportunities in agriculture and tourism may have caused the low rate of housewives. In addition, the cultural context of the region allows women to participate in the labor force easily.

Table 7. Distribution of Respondents According to their Gender and Employment Status

		Employment Status						
	Gend.	**Empl.**	**Self-emp.**	**Pens.**	**Hwife**	**Stdnt**	**Unemp**	**Ttl.**
Chicken	Male	48 (44.0%)	40 (66.7%)	25 (39.7%)	0 (0.0%)	4 (30.8%)	2 (20.0%)	119
	Fem.	61 (56.0%)	20 (33.3%)	38 (60.3%)	52 (100%)	9 (69.2%)	8 (80.0%)	188
	Total	**109**	**60**	**63**	**52**	**13**	**10**	**307**
Milk	Male	49 (43.7%)	35 (61.4%)	20 (30.8%)	0 (0.0%)	5 (33.3%)	2 (33.3%)	111
	Fem.	64 (56.3%)	22 (38.6%)	45 (69.2%)	50 (100%)	10 (66.7%)	4 (66.7%)	195
	Total	**113**	**57**	**65**	**50**	**15**	**6**	**306**

According to the data obtained from fourth question (Q.4) related to "education status"; 54.4% of the respondents has an education level above high school in chicken sample as can be seen in Table 8. This number corresponds to 47.4% for milk sample. University graduates account for 36.8% of all respondents in chicken group, whereas this proportion is 29.8% in milk group. When we categorize education levels from 1 to 7 as primary school, middle school, high school, technical school, university degree, graduate and doctoral degree (along with primary and middle school, graduate and doctoral degree groups are merged for practical

purposes in econometric analysis), the mean level of education is 3.73 for chicken group and 3.62 for milk group; i.e. the respondents' education level is between high school and technical/professional school. When we compare the characteristics of the sample with Kuşadası and Turkey, we see a clustering of the sample around university degree. This means that our sample's education level is higher than both Kuşadası and Turkey. In terms of high school education, the percentages of our sample and Turkey are similar in general. One more thing is that primary and middle school graduates are under-represented in our sample.

Table 8. Education Status According to Genders

		Education Status					
	Gender	**Element.**	**High Sc.**	**Tech Sc.**	**Univer.**	**Graduate**	**Total**
Chicken	Male	28 (48.3%)	34 (41.5%)	12 (33.3%)	39 (34.5%)	6 (33.3%)	119
	Female	30 (51.7%)	48 (58.5%)	24 (66.7%)	74 (65.5%)	12 (66.7%)	188
	Total	**58**	**82**	**36**	**113**	**18**	**307**
Milk	Male	20 (40.8%)	35 (31.3%)	8 (20.5%)	43 (47.3%)	5 (33.3%)	111
	Female	29 (59.2%)	77 (68.7%)	31 (79.5%)	48 (52.7%)	10 (66.7%)	195
	Total	**49**	**112**	**39**	**91**	**15**	**306**

When the data are analyzed in terms of fifth question (Q.5) –the number of people in the household including the respondent's -it is seen that the average number of household is about 3 people for both samples (exactly, 3.16 for chicken subsample and 3.20 for milk subsample). When we consider the presence of children at the ages between 0 and 18 in the family (Q.6), in chicken subsample we observe that 51.5% (158) of the respondents do not have any children between 0-18 ages; and 50.32% (154) in milk subsample. When it is calculated separately for three age groups, 30 of the respondents out of 307 have children in their household between ages 0-2. In 44 households, there is at least one child at the age between 3 and 6; and it is 91 households out of 307 respondents that have children between ages 7-18. For

milk group, these numbers correspond to 30, 35 and 105 households, respectively, as can be seen from Table 5.

In (Q.7), we try to get information about the residence area of the respondent since there are also people coming from rural Kuşadası or from outside the city; and we wonder if this situation creates a difference on willingness to pay a premium for organic foods. As it is anticipated, a great majority of the respondents are residents in Kuşadası (85.7% and 86.2% for chicken and milk groups, respectively). The rest of the sample is either from villages of Kuşadası or they are outsiders, as the numbers can be observed in Table 5. The next question (Q.8) is also similar to this question in the way that it categorizes respondents in terms of being a resident or outsider coming for a visit. Therefore, only the answers to the Q.7 are used in econometric analysis. Last but not the least, in the question eliciting income data (Q.9), the distribution of respondents in terms of income groups are close to each other for both samples. Most of the respondents belong to middle income group (1.501 TL-2.500 TL and 2.501 TL-5.000 TL); while the people in 10.000 TL+ income group are considered as outliers. When income groups are categorized from 1 to 6 (0-750 TL, 751-1,500 TL, 1,501-2,500 TL, 2,501-5,000 TL, 5,001-10,000 TL and 10,000 TL+), the mean of the incomes is about 3.42, meaning that the average income of all households is between two groups: 1,501-2,500 TL and 2,501-5,000 TL. This amount is a little bit above the average household income of Turkey calculated by Turkish Statistical Institute which is about 2,250 TL.

Besides variables that are used to explain willingness to pay a price premium for organic chicken and milk purchases, there are some descriptive questions in the survey in order to define purchasing habits and perceptions of the respondents for organic foods. In the following part, answers to these questions are analyzed for organic chicken and milk.

In the second part of the survey on consumption habits, first it is asked if the respondents are familiar with the term “organic food” (Q.12). The following question (Q.13) consists of four different definitions, and the respondents are asked

to find the closest definition of organic food. In choice (a), safety and health as well as physical appearance of the goods are mentioned. (b) is related to natural foods grown in natural conditions. (c) is the true definition of organic foods and emphasize environmentally-friendly production without the use of chemicals and genetic modification. (d) differs from (c) in the way that chemical substances could be used in production to preserve the physical form of the product while genetic modification is still not allowed. As mentioned by the respondents, the familiarity with the term "organic food" is high among them (Table.9). Out of 307 completed surveys for organic chicken, 288 of the respondents mention a familiarity with the term. In accordance with it, 238 respondents correctly choose the closest definition of organic foods; while 69 of the respondents in total fail to provide the correct definition. Among these 69 people, only 8 of them mention that they are not familiar with the term while 61 of the respondents claim a familiarity although they choose the wrong definition. In the milk group, 282 of the respondents claim that they are familiar with the "organic food" term; while 238 of the respondents choose the correct definition. 68 of the respondents fail to provide the closest definition of organic foods. Since women are the main shoppers of the households, they might perceive themselves to be more familiar with organic foods, and so they have a higher familiarity ratio. For milk group, it results as expected; men have a higher proportion of wrong answers (29.7%) than women (17.9%). However, the percentage of the wrong answers provided by women (23.4%) is higher than men (21%) for chicken group.

Table 9. Familiarity with the Organic Foods

	Familiarity with the organic foods						
	Gender	***Familiarity***	***a***	***b***	***c***	***d***	***Total***
Chicken	Male	107 (89.9%)	7	15	94	3	119
	Female	181 (96.2%)	14	24	144	6	188
	Total	**288 (93.8%)**	**21**	**39**	**238**	**9**	**307**
Milk	Male	102 (91.9%)	11	16	78	6	111
	Female	188 (96.4%)	10	17	160	8	195
	Total	**282 (92.2%)**	**21**	**33**	**238**	**14**	**306**

When the frequency of consuming organic foods in general is asked to the respondents (Q.14), the stated amount of consumption of organic foods is very high for both subsamples (Table 10). Respondents that never consume organic foods remain marginal; most of the respondents at least once try organic foods. The people who never taste organic food constitute 6.5% of chicken sample and only 2.3% of milk sample. The highest frequency category for chicken group is the ones consuming organic foods "usually" (30.9%) followed by the respondents purchasing organic foods "sometimes" (30.0%). For milk group the situation is a bit different. Most of the respondents consume organic foods sometimes (37.3%); it is followed by consumers that usually purchase organic foods (30.7%). When all frequency labels are categorized numerically and the mean is taken, it is seen that average frequencies are very close to each other between genders and among groups. The respondents for both groups tend to consume organic foods "sometimes" on average.

Table 10. Organic food consumption frequency

		Organic food consumption frequency					
	Gender	**Never**	**Seldom**	**Sometimes**	**Usually**	**Always**	**Total**
Chicken	Male	9	35	36	28	11	119
	Female	11	35	56	67	19	188
	Total	**20**	**70**	**92**	**95**	**30**	**307**
Milk	Male	4	26	46	27	8	111
	Female	3	37	68	67	20	195
	Total	**7**	**63**	**114**	**94**	**28**	**306**

In (Q.15) we investigate the reasons encouraging the respondents to consume organic foods. After asking respondents to order the most important three reasons in their opinion, points are assigned according to the ranking by the consumers. 1st choices of the respondents are multiplied by 3 points; while 2^{nd} and 3^{rd} choices are multiplied by 2 and 1, respectively. In the bar chart below (Figure 6), the ranking of the reasons by total points is given, green representing the chicken group and blue, the milk group.

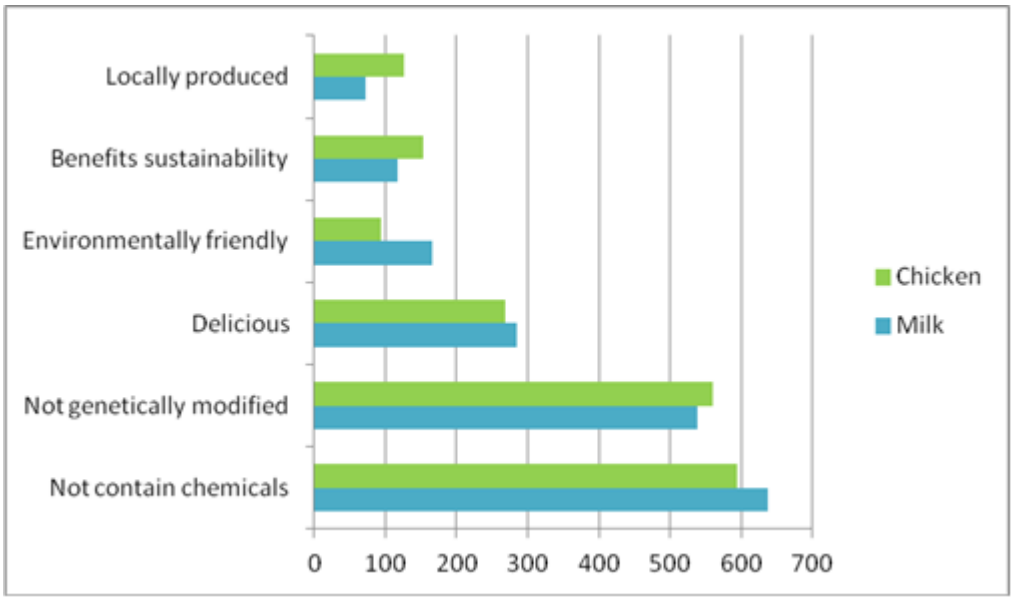

Figure 6. Reasons for Consuming Organic Foods

When the ranking of the reasons are examined, it can be seen that self-oriented reasons have the priority; respondents are consuming organic foods primarily in the sense that they are healthy. The order of the reasons is the same both for the chicken and milk subsamples, except two cases. As the most reported reason, respondents think that organic foods are healthy because they do not include chemicals and insecticides, pesticides and fertilizers. The second reason is related to genetic modification technology. It is thought that people are not keen on trying this new technology or do not find it healthy. Therefore, they choose to consume organic foods since they are not genetically modified. The following reason that causes respondents to prefer organic foods is that they are more delicious than conventionally produced foods. These are followed by altruistic reasons, due to its support for sustainability and the next generations by abandoning the over-exploiting production techniques. Additionally, we thought that since the organic farming is a highly value added activity, and it contributes to local development of the region and ensures producers with a higher income (Özbilge, 2007). However, rankings of the options "support to local economy" and "environmental friendliness of organic foods" are very close to each other, and these are the least important reasons for consuming organic foods. Altruistic reasons lag behind the other ones

which imply that the respondents are worried less about the future generations and people other than themselves. Lastly, some of the respondents cite that it is a matter of acquaintance coming from the past or their childhood. They look for the taste they get used to in the past.

When it comes to the drawbacks that prevent people from consuming organic foods (Q.16), the high prices of organic foods that are readily available in the market is ranked first by both groups. In chicken sample, availability of organic foods and lack of trust rank very close to each other following the concern for high prices; whereas in milk case, lack of trust gains higher importance than the availability of the product. The supply of organic foods falls short of meeting the demand; and also, people are worried about whether they can trust these products or the sellers. One thing about organic foods is that the respondents are the least worried about the physical appearance of organic products. This might be due to the belief that organic foods have deformation in physical sense and they are not smooth. Therefore, people may think that it is more likely to have deformations and defects for an organic product. These answers given to this question are summarized in Figure 7.

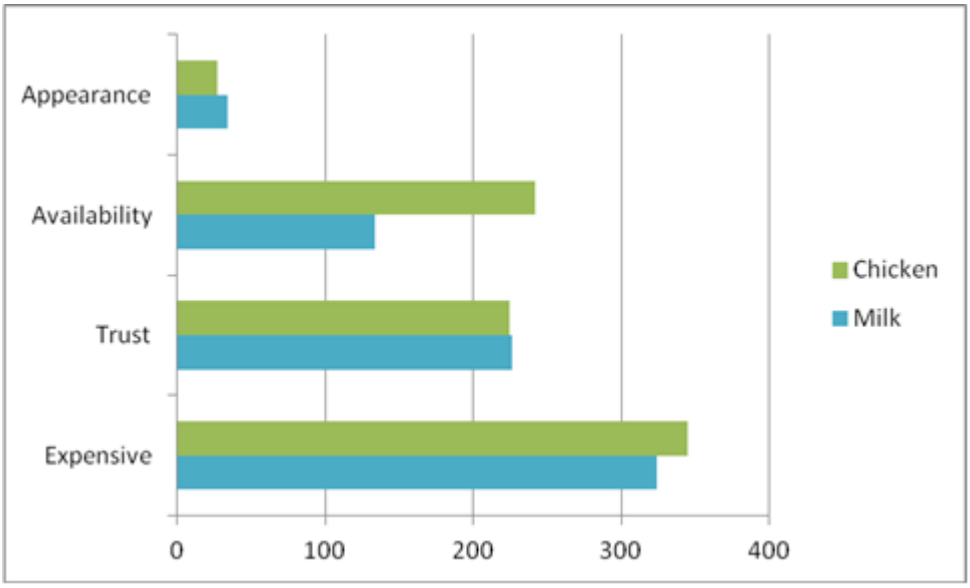

Figure 7. Reasons discouraging the consumption of organic foods

It is also investigated whether people ask for a certificate while buying organic products (Q.18). While nearly 44% of the respondents do not ask for a certificate and just believe in what the seller says; about 39% do ask for a certificate. The rest of the respondents either provide their needs from specialty shops, from the seller they trust, or grow themselves. Since there is no certification culture in local markets, some cite that their behavior changes in different places. They do not ask certificate in local markets while they ask for one in supermarkets or specialty shops. In addition, some respondents try to understand the characteristics of the products by looking at the physical appearance and flavor, and they believe that they can distinguish organic foods in this way. When it comes to the places that the respondents buy their foods, it is mentioned by 66.3% of the respondents in chicken survey group and 66.7% of the ones in the milk group that they purchase foodstuffs from local markets. As it is said before, this could be due to favorable climate conditions that allow a wide range of products to be grown in natural environment; dietary habits of coastal Aegean region based on natural herbs that could only be found in local bazaars, and also a variety of product range supplied from the villages around Kuşadası. Then this is followed by the purchases made directly from producers (15.3% in chicken sample and 13.9% in milk sample). All the remaining means; i.e. supermarkets, groceries, and organic markets remain marginal. In addition 24 people in chicken group and 12 people in milk group add that they also raise organic products on their own.

When it is asked if people find conventionally produced foods harmful (Q.19), 290 out of 307 consumers for chicken group and 288 out of 306 respondents for milk group answered “yes”. Only 17 people for chicken group and 18 people for milk group cite that they do not conceive conventionally produced foods harmful. However, for the succeeding question; that is, the damages of conventionally produced foods having a high priority for the respondents (Q.20), they all provide an answer. So, it is possible that these respondents do not understand the exact definition of conventionally produced foods although it is adequately explained in the previous question and also in face-to-face interviews upon request. The damages

that are thought to be caused by conventionally produced foods are ranked by the respondents and the points are assigned. The harm that is found to be most important for both groups is the hormonal deformations caused by some chemicals such as DDT resulting in infertility, some types of cancer, feminization of males, learning disorders, etc. by affecting the endocrine system (Figure 8). They are cited nearly by all of the respondents in different priorities. As in the case of motivations behind consuming organic foods, self-oriented motives of health again dominate the other reasons. The damage over neural system and ever-increasing use of synthetic pesticides and insecticides as the result of immunization of insects to these chemicals follow. These two reasons are nearly the same in terms of ranking. While, antibiotic resistance in humans and microbiological risks are close to each other; respondents are least worried about the loss in biological diversity.

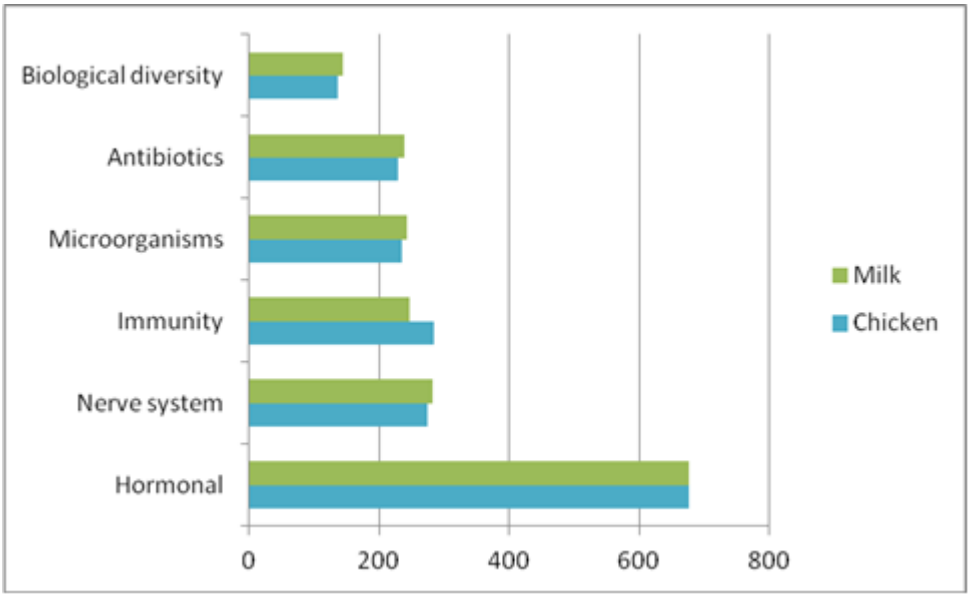

Figure 8. Harms Caused by Conventional Products

Although most of the respondents think that conventional foods are harmful (Q.19), and worry about several negative effects of conventional foods, they are not keen on gathering information about foods and food security. When the survey results are investigated (Q.21), it is seen that 14% of the respondents do not gather information much about food and food safety, and 47.2% of the respondents obtain information rarely; while 21.5% obtain information sometimes and 17.3% actively inquire about food issues. The latter two groups mention some specific examples of information they obtain or specific channels of information. According to these inquiries, most of them gather information from the internet (the webpage of Ministry of Health, "No to GDO" Platform, Buğday Magazine); television programs that are being popular in Turkey lately such as "Dr.Oz", "Doktorum", which are presented by doctors and host specialists; governmental and non-governmental organizations (Ministry of Health, Agricultural Credit Cooperatives, Chambers of Agriculture) . The subjects they inquire are the illnesses related to specific types of food consumption, types of production, food poisoning cases, foods that are good for the health of children and immune system, the chemicals used in growing vegetables and fruits, carcinogenic foodstuff, traditional nutrition, regulations and controls about food and food safety, packaged foods, nutrition facts, processed foods, storage conditions. The respondents who have food-related jobs inquire the subject of food and food security as a result of their professions; they take part in seminars and educational programs. Apart from the ones actively searching information on food and food security, the group gathering information "sometimes" concentrates more on television programs as it is understood from explanations in surveys.

As an answer to the question which focuses on the sources that people gather information from (Q.22), two channels come to forefront; internet and TV/Radio broadcasts in chicken group as can be seen in Figure 9. This might be due to the ease of use and widespread availability of these sources with an ample amount of programs presented by the specialists. After these sources, people prefer to receive information from the doctors/nutritionists/dietitians. It is closely followed by some

other media organs: newspapers/magazines/books. This can be due to the increasing interest of people in nutrition, food and food security and the resulting rise in number of scientific publications or TV programs. The remaining sources are ranked as family/friends; food packages; food certification agencies (FCA); official institutions and lastly academic researches. In milk group, TV/radio comes to forefront; while it is followed by internet, newspapers/books/magazines, and doctors/nutritionists/dietitians as being close to each other. Information gathered from food packages and family/friends are ordered after the former ones. These are followed by academic sources, food certification agencies and lastly by official institutions. When trust to these sources are considered (Q.23), about 67.75% of the respondents in chicken group and 66.9% in milk group have confidence in the sources they gather information while the rest are not sure about the validity of information they get from these sources.

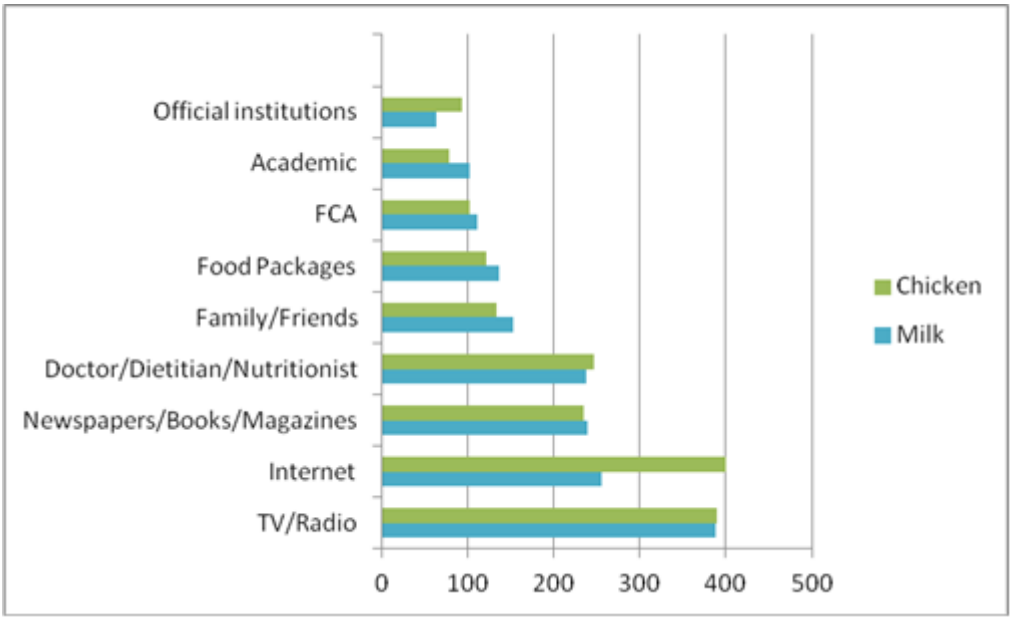

Figure 9. Sources of information

Lastly, when it is asked to the respondents, who should be responsible for the food safety, 41% of them in chicken subsample and 37% of the respondents in milk subsample, prefer official institutions. It is followed by food certification agencies with 18% and 24% for chicken and milk group, respectively. Then for both of them, the producers, consumer associations, local authorities and consumers themselves follow respectively. We can see that the respondents prefer more collective and large scaled measures conducted by state institutions or third parties; while some prefer the cooperation of two or more institutions.

CHAPTER 5

DATA ANALYSIS

5.1. Description of the Variables Used in the Analysis

Table 11 includes the list and the explanation of the variables used in the analysis. However, not all of them are included in the estimations since they are highly correlated with each other or statistically insignificant.

Table 11. Description of the Variables Used in Regression Analysis

Variable	Variable Description	Categories
Fem	Gender of the respondent	1=female, 0=otherwise
age	Age of the respondent	Taken as stated (no categorization)
empl	Job description of the respondents: Either they are employee, self-employed, pensioner, housewife, student or unemployed. Each case is taken as a separate variable.	1=employee, 0=otherwise
self		1=self-employed, 0=otherwise
pen		1=pensioner, 0=otherwise
hwife		1=housewife, 0=otherwise
stu		1=student, 0=otherwise
unempl		1=unemployed, 0=otherwise
fr_prof	Food related proficiency	1=if the respondent has food related proficiency, 0=otherwise

Table 11 (continued)

Variable	Variable Description	Categories
primsc	The education level of consumers (simplified under three heading)	1=if the respondents is at least graduated from primary or elementary school, 0=otherwise
highsc		1=if the respondent has a high school or 2-year college degree, 0=otherwise
univer		1=if the respondent has a undergraduate or graduate degree, 0=otherwise
hh_size	Size of the respondent's household	Taken as stated (no categorization)
early_ch	The presence of children in the household arranged according to the ages	1=if the respondent have children between ages 0-2, 0=otherwise
middle_ch		1=if the respondent have children between ages 3-6, 0=otherwise
late_ch		1=if the respondent have children between ages 7-18, 0=otherwise
ccentre	Residence place of the respondents	1=if the respondent lives in the city center, 0=otherwise
rural		1=if the respondent lives in rural places of Kuşadası, periphery of the city center, 0=otherwise
outsid		1=if the respondent is out of Kuşadası, 0=otherwise
res_type	Residence duration of the respondents	1=if the respondent is daily visitor or stays at most 1 month, 2=if the respondent spends time between 1-11 months, 3=if the respondent is permanent resident

Table 11 (continued)

Variable	Variable Description	Categories
low_inc	The income groups of the respondents: 0-1.500, 1.501-5.000, 5.001+	1=if the respondent falls into the first income group, 0=otherwise
med_inc		1=if the income of the respondent falls into second income group, 0=otherwise
high_inc		1=if the income is in third group, 0=otherwise
fr_illness	Food related illness	1=if the respondent or the household have a food related illness, 0=otherwise
org_pfreq	Organic food purchasing frequency	1=Never/Rarely 2=Sometimes 3=Often/Everytime
spmkt	Shopping place; i.e. from where the respondents acquire their organic foods,	1=supermarket, 0=otherwise
lcl_mkt		1=local markets, 0=otherwise
grocer		1=grocery, 0=otherwise
org_mkt		1=organic markets, 0=otherwise
prodcr		1=producers, 0=otherwise
oth_plc		1=other, 0=otherwise
food_know	How frequently the respondents get knowledge about food and food security.	1=Not much/Rarely 2=Sometimes, when there is some interesting things 3=Often, actively
trust_perc	Trust perception towards the sources of knowledge	1=yes, I do believe; 0=other (no, I do not)
chic_cfreq **milk_cfreq**	Chicken/milk consumption frequency	1=Never 2=Once/twice a month 3=Once/Twice a week 4=Everyday

5.2. Econometric Analysis

As it has been explained before, for the econometric analysis, the double bounded logit model is used specific to the double bounded dichotomous choice contingent valuation format. In this chapter, the study by Lopez-Feldman (2012) is followed for an accurate run of the model. First of all, as in the context of double bounded logit model, the variables in Table 12 are created in order to estimate the pecuniary value of the willingness to pay, other than the above variables in Table 11.

Table 12. Definitions of the Terms Used in Forming the WTP

Variable	**Definition**
bid1	Initial amount (bid) offered in TL
bidh	High bid in TL (offered if the respondent say yes to first bid)
bidl	Low bid in TL (if the respondent say no to the first bid)
bid2	The ultimate bid that the respondent provides an answer
nn	=1 if the answer to the willingness to pay questions was no, no
ny	=1 if the answer to the willingness to pay questions was no, yes
yn	=1 if the answer to the willingness to pay questions was yes, no
yy	=1 if the answer to the willingness to pay questions was yes, yes
depvar	Indicator variable with the following structure (=1 if nn=1, =2 if ny=1, =3 if yn=1 and =4 if yy=1)

Source: Introduction to Contingent Valuation Using STATA (Lopez-Feldman, 2012), p.6

Therefore, we now have the first and the second answers of the respondents to the bidding questions, with the second one is conditional on the former; and the TL amounts of the first and second bids in order to put a monetary value on willingness to pay along with other explanatory variables. The regressions that are run are listed in Table 13.

Table 13. List of Regression Equations for Organic Chicken Sample

Variable	REG(1)	REG(2)	REG(3)	REG(4)	REG(5)	REG(6)	REG(7)
Beta	25.9405 (0.9036)						
Gen		1.5160 (1.7117)	1.6003 (1.7109)	1.5648 (1.6752)	0.8795 (1.7068)	0.9593 (1.7061)	
Age		0.1351** (0.0658)		0.1553** (0.0674)	0.1111 (0.0653)	0.1262 (.0649)	0.1184 (0.0671)
Agecat			2.1424** (0.9634)				
Educat				-1.8006 (1.2082)			
hh_size				-1.6627** (0.7937)			-1.1478 (0.6706)
early_ch				7.0889** (2.9267)			5.9891** (2.8440)
middle_ch				5.0755** (2.2600)			5.0145** (2.2254)
late_ch				1.4307 (1.2811)			
Ccentre							3.5799 (2.2246)
Inccat				5.6510** (1.4801)			
med_inc							3.0611 (1.9186)
high_inc							8.3744** (2.8310)
org_pfreq						2.3136** (1.0028)	1.7223 (0.9794)
lcl_mkt							3.1337 (1.9279)
oth_plc							7.6086** (3.7449)
food_know					3.4534** (1.1526)		2.1486 (1.1627)

The numbers in brackets are standard errors.

**: variables that are significant at α=0.05

Table 13 (continued)

Variable	REG(1)	REG(2)	REG(3)	REG(4)	REG(5)	REG(6)	REG(7)
chic_cfreq							-1.8565 (1.3108)
WTP	25.94057 (0.9036)	25.9481 (0.8992)	25.9529 (0.8982)	26.0852 (0.8771)	26.0273 (1.1526)	25.9322 (0.8887)	29.8382 (2.3514)

The numbers in brackets are standard errors.
**: variables that are significant at α=0.05

After creating all of the explanatory variables, we run the model with no control variables (REG(1) in Table 13), i.e. willingness to pay is constant, the model directly estimates the willingness to pay as being approximately equal to 26 TL. In the next step, several models are run by using different variable combinations each time (Table 13).

In the second regression, we include gender and age variables (REG(2)). When the WTP is calculated at the mean values of variables for the estimation above, it is nearly the same as the WTP with no control variables as can be seen in Table 13. Although the gender variable is not significant, being female positively affects the willingness to pay for organic chicken as in most of the studies (Gil et al., 2000; Govindasamy and Italia, 1999; Sakagami and Haas, 2012; Van Doorn and Verhoef, 2011). Since women are the main shoppers of the household, and mostly they cook and prepare the meals, they are more sensitive about the consumption of healthy foodstuff. Also, since they are more caring for the others as a result of their social role and responsibility, they are more interested in environmental topics (van Doorn and Verhoef, 2011). In addition, as the age increases, people become more experienced and have more knowledge about some issues. Since the organic-like production type existed before 1980s, the older people may be more familiar with the organic foods and they want to pay more than the young people in order to get the taste they had once. Also, they might care more about their health.

In order to estimate the marginal values of different ages on WTP, we generated a categorical variable of age (“agecat”), by dividing ages into four groups according

to the classification in the variable list (Table 5). When the age variable is taken as categorical, it is also significant at 95% confidence level (REG(3)). The effect of positive coefficients of age and gender (i.e. being female, although it is not statistically significant at 95% confidence level) can be seen in WTP values. First, if we consider females in terms of the four age groups, the WTP increases as the respondent gets older. For the first age group (18-30 years), females are ready to pay about 23.95 TL for one kilogram of organic whole chicken; while this premium is about 26.10 TL for the second age group (30-45 years). For the consecutive age groups (3rd group: 45-60 years; 4th group: 60+), the WTP becomes 28.23 TL and 30.38 TL, respectively. When being male is considered for each age group, it can be seen that females are ready to pay more than males. The WTP amounts for males are 22.35 TL, 24.50 TL, 26.63 TL and 28.77 TL for the age groups, respectively.

After we find the effect of willingness to pay for organic chicken for two basic variables, we add other variables to the regression (REG(4)). When the mean values are evaluated in the model in order to find the willingness to pay, it is estimated as about 26 TL. Education is found to be statistically insignificant. However, education level negatively affects the willingness to pay for organic chicken as also experienced by Batte et al. (2007); Bernard and Gifford (2006); Gil et al. (2000); Govindasamy and Italia (1999); Misra et al. (1991). It may be the case that as the education level increases, people become more skeptical. People trust the producers and organic foodstuff less. Household size also negatively affects the willingness to pay decision. Since the food expenditures increase as the household size gets bigger, people do not want to pay more for organic chicken. Also, it may be due to the marginal effect of income, since as the household size gets bigger the income per person decreases when compared with small families (Govindasamy and Italia, 1999). The presence of children in the family creates a positive effect on willingness to pay, and the variables related to children in the household are statistically significant with the exception of the children between the ages 6-18. It might be said that the parents want to decrease the exposure of their children to certain chemical substances and processes starting from their early ages (Bernard and Gifford, 2006).

Also, as the age of the children rises its effect on willingness to pay decreases. The parents care more about small children, and their nutrition. Income is found to be the most relevant variable for the willingness to pay decision.

In order to evaluate the income levels together, a new categorical variable is created by using low income, middle income and high income variables as "inccat". As expected, the price premium that the respondents pay increases with the income. In order to support these findings, price premiums are calculated for different combinations of these variables. For example; females at the first age group (18-30 years), graduated from either high school or vocational school, having a monthly income of 1.500-5.000 TL, and with a child of 0-2 ages are willing to pay 32.95 TL for organic chicken. Keeping all the other characteristics the same, the presence of children between ages of 3-6 instead of 0-2 aged children decreases the willingness to pay for organic chicken to 31.21 TL. When the age group is changed to the 2nd group (30-45 years), WTP increases sharply. The 30-45 age group females with the previous characteristics and having children of 0-2 ages are willing to pay 35.33 TL. This number falls to 33.60 TL for having a child at the ages between 3-6, and 29.90 TL for a child at the ages between 7 and 18. If we take the 3rd age group of females having children at the ages of 7-18, the WTP increase to 32.27 TL.

When the WTP is considered for a female in the 1st age group (18-30 years) and 2nd income level (1.501-5.000) and having a child at the ages between 0-2 by only changing the education level from high school/vocational school to university degree, price premium falls about 2 TL and becomes 31.10 TL. In the case of males; keeping all the other variables constant, the WTP decreases a little bit. Males with a high or technical school education, at the 2nd income level (1.501-5.000) and 1st age group (18-30 ages) with a child of 0-2 ages are willing to pay 31.30 TL. The presence of a child between ages 3-6 decreases the WTP for males also to 29.57 TL.

After socio-demographic characteristics, we examine the other behavioral and habitual characteristics. When evaluated in separate regression equations, two of these characteristics are found to be statistically significant: food knowledge and

organic food consumption frequency. In REG(5), when the variables are evaluated at their mean values, the willingness to pay a price premium is about 26 TL. The more the consumers get information on food and food security, the more they are willing to pay for organic chicken.

Lastly, one more habitual variable that significantly affects willingness to pay is prior organic food consumption (REG(6)). When the prior consumption of organic chicken is considered, it is seen that the respondents having more frequent consumption of organic foods already, also have a higher willingness to pay for organic chicken (Rodriguez et al., 2006). We believe that people consuming organic foods prior to this survey are already willing to pay more for such food items. So, it is easier for these people to decide on the price premium of organic chicken. When females are considered with a mean age, the WTP for organic chicken for the 1st level of prior consumption is only about 18.53 TL. It increases to 20.85 and 23.16 by the 2nd and 3rd groups of prior organic food consumption frequency, respectively.

Finally we have applied a stepwise regression from general to specific. The most statistically insignificant variables are dropped from the regression and the improvement of the AIC is observed. The variables are dropped until there is no more improvement in the AIC. The only variable that is not explained in the previous regressions is other shopping places (oth_plc) stated by the respondents. According to the analysis, the respondents who state the other places as their shopping places are ready to pay about 7.5 TL more for the organic chicken over the price of conventional one. Since under the other heading the respondents cite that they either produce themselves or acquire the organic food from their relatives in villages, they may have exaggerated the amount they are willing to pay.

There are no more variables that are found to be significant for the chicken sample. Food related proficiency is found to be insignificant with the price premium paid. However, it is worth to mention that its sign is negative. Most of the respondents who have food related proficiency are farmers; and the others are either

agricultural engineers or medical doctors. We thought that since the farmers produce themselves and the others cited that they have the chance to reach safe organic foods already, they are not willing to pay more for organic chicken.

Table 14. List of Regression Equations for Organic Milk Sample

Variable	REG(1)	REG(2)	REG(3)	REG(4)	REG(5)	REG(6)	REG(7)	REG(8)
Beta	7.7063 (0.3532)							
Gen		0.2380 (0.7307)	0.2477 (0.7308)	0.0981 (0.7189)	0.2481 (0.7741)	-0.1195 (0.7376)	0.0391 (0.7345)	
Age			-.1940 (0.4025)	-.0210 (0.0282)	-.0585 (0.0372)	-.0135 (0.0276)	-.0119 (0.0290)	-.0515 (0.0324)
Empl					2.4128 (1.7361)			
Self					3.8973** (1.8784)			1.4222 (0.8883)
Pen								2.3530** (1.0556)
hwife					2.1314 (1.9735)			
unempl					2.1150 (2.7854)			
primsc					-1.4364 (1.0339)			
highsc								1.2100 (0.6731)
univer					-1.6819** (0.7924)			
early_ch				-.5248 (1.1220)	-.7150 (1.1189)			
middle_ch				-1.8763** (0.9059)	-2.0374** (0.9071)			-1.8221** (0.8751)
late_ch				-.9890** (0.4929)	-.8087 (0.4989)			-.8644 (0.4712)
ccentre					-1.9444** (0.9914)			
rural								2.3126 (1.2549)

The numbers in brackets are standard errors.
**: variables that are significant at α=0.05

Table 14 (continued)

Variable	REG(1)	REG(2)	REG(3)	REG(4)	REG(5)	REG(6)	REG(7)	REG(8)
high_inc					1.2641 (1.0385)			
fr_illness					-2.0952** (0.9617)			-2.4666** (0.9488)
org_pfreq							1.0812 (0.4615)	0.7612 (0.4461)
org_mkt								2.8971** (1.3107)
food_know						0.9836** (0.4329)		0.8428** (0.4268)
milk_cfreq								-0.5402 (0.3537)
WTP	7.7063 (0.3532)	7.7092 (0.3533)	7.7094 (0.3533)	5.0758 (1.4107)	7.7365 (0.3381)	7.6840 (0.3490)	7.7316 (0.3533)	7.2080 (0.3995)

The numbers in brackets are standard errors.
**: variables that are significant at α=0.05

The same process is repeated for the milk case (Table 14). First, we run the model with no control variables (REG(1)). The results show that the willingness to pay for milk is found to be 7.7 TL as seen in Table 14. Again, the variables for gender and age are added to the model (REG(2)) as can be seen in Table 14. Although none of the variables are significant, we want to see the effect of them on WTP decision. When the variables are evaluated at their mean values, the willingness to pay is again equal to 7.7 TL. If these two variables are taken together, as in the case of chicken group, females are more sensitive in terms of consuming organic milk. Age has a negative coefficient, meaning that younger people are willing to pay more for consuming organic milk as expected in most studies in the literature (Dettmann and Dimitri, 2010; Govindasamy and Italia, 1999; Loureiro and Hine, 2001; Millock and Hansen, 2002; Van Doorn and Verhoef, 2011; Wang and Sun, 2003). In order to visualize the amount of WTP according to age groups, we create the variable "agecat" by dividing the respondents into four different age groups: 18-30 years, 31-45 years, 46-60 years and 60+ (REG(3)). The willingness to pay for the females at the first age group is about 8.03 TL; while it falls to 7.84 in the 2nd age group, to 7.64 for the third one, and to 7.45 for the 4th age group. When

the males are considered, their WTP is generally lower than females. The WTP's according to the age groups are 7.78, 7.59, 7.40, and 7.20, respectively.

When the presence of children in the family is again considered, they are significant except the variable of children between ages 0-2 (REG(4)). However, the signs are negative similar the study of Loureiro and Hine (2001). It might be that since the new-born and the children until the age of two are fed with breast milk, the parents do not have to buy regular cow milk. Also, there exist special milk products and baby foods used as food supports feeding babies. Therefore, they may not be willing to pay for organic milk. For the females at the first age group with a child of 0-2 years old, the WTP is about 8.45 TL. However, it decreases with the age of the child. For the females at the ages 18-30 and with a child in between 0-2 ages, it is equal to 7.11 TL. When we do the same for the 2nd age group of females, the WTP for children between the ages 0-2 is 8.03 TL. This number becomes 6.69 TL and 7.59 TL for the children at the ages between 3-6 and 7-18, respectively.

Some other variables are tried in the regressions to find a significant relationship with willingness to pay. As a result we find the variables self-employed, pensioner, university degree, children at the ages of 3-6, living in city center and food related illness to be statistically significant (REG(5)). First of all, to become a self-employed is positively related with the willingness to pay. This might be the result of the higher income earned by the self-employed people when compared with the income of the employees. The lack of upper level private sector jobs which give a chance to people in order to make much more money might count for this. Although, age is negatively related with the price premium to be paid, being a pensioner is positively affecting the decision to buy organic milk. Due to the concern for osteoporosis, they might be keen on consuming organic milk. This time, the university degree has a negative and significant effect on willingness to pay decision. As we have told before for the chicken group, the more people are educated; they may be more skeptical about the safety of the food and have less confidence in those food items. Therefore, this might have a negative effect on willingness to pay decision. Surprisingly, food related illness is found to be

negatively related with the price premium. We thought that either the percentages of people who are allergic to cow milk are higher in number among the respondents answering that question, or it might become harmful with certain medicines. By considering some of the significant variables, we calculated different WTP values. According to this, a female pensioner at the ages of 45-60, graduated from university, living in the city center and having a food related illness is willing to pay 6.40 TL for the organic milk. If we drop the marginal effect of food related illness it becomes 8.52 TL. The WTPs for males for the same characteristics are 6.14 TL and 8.25 TL, respectively. When the education level is changed and food related illness is dropped, the WTP is about 9.00 TL for female pensioners at the ages of 45-60 and graduated from primary or middle school. When the age is 60+ the WTP becomes 7.96 TL. For the second age group females with a university degree living in the city center and having children at the ages 3-6 are willing to pay only 2.58 TL. When the employment status "self-employed" is added to the marginal analysis, it suddenly becomes 6.46 TL while self-employed males are willing to pay 6.20 TL.

As in the case of organic chicken, as the food knowledge increases, the WTP for organic milk also increases (REG(6)). When people learn more about the food security, and the ongoing issue about food, they might have an inclination towards consuming organic foods. A female at an average age getting information on foods and food security rarely is willing to pay 7.62 TL. The WTP becomes 8.60 when the information on food increases to the level "sometimes", lastly for the maximum knowledge it becomes 9.59 TL. When males are considered, those numbers are equal to 7.74 TL, 8.72 TL and 9.71 TL, respectively.

Again the prior consumption of organic foods is effective on willingness to pay decision of the respondents (REG(7)). If people have consumed of organic food items previously, they are already familiar with organic foods. So, rather deciding on consuming organic milk or not, they only decide on the price. Females at an average age consuming organic foods, rarely are ready to pay 6.96 TL. This amount increase to 8.04 TL with a more frequent consumption, and finally it becomes 9.12

TL for the respondents consuming organic foods usually or always. These amounts are equal to 6.92 TL, 8.00 TL and 9.08 TL, respectively, for males.

Finally, by using from general to specific stepwise approach, we try to find the most significant regression. In evaluating the regressions and deciding on the significance of each regression, AIC is used. In each step, the most insignificant variable is dropped from the equation and improvement in the AIC is verified in each step. When we observe a decrease in AIC, we stop the procedure. The variables for REG(8) are taking place in Table 14. Other than the variables used in previous regressions, being a pensioner is positively related with the WTP for organic milk. A pensioner with a high school degree and average food knowledge is willing to pay about 12 TL for per liter of organic milk. The older people are more careful about their health and the pensioners are generally above the age 50. Also, shopping from the organic markets is significant in this equation being different from other regressions. A consumer with some level of food knowledge and prior organic food consumption, and shopping from organic markets is ready to pay again about 12 TL for one liter of organic milk. Since the organic markets generally have higher prices, the people shopping from organic markets may have higher incomes. Also, they may be more familiar with organic foods than the others.

So far we have found the willingness to pay for organic milk and chicken and the factors affecting the willingness to pay decision. For this reason, both socio-demographic variables and habitual variables are taken into account. The results reveal that some of the variables are effective on willingness to pay for organic chicken and milk whereas some of them remain insignificant. First, gender is found to be insignificant for both products although it has a positive effect. The positive relation of gender with the price premium is consistent with the results of Gil et al. (2000), Govindasamy and Italia (1999), Sakagami and Haas (2012), van Doorn and Verhoef (2011). The age variable gives different results for both products. It is significant and positively related with the WTP decision for organic chicken; meaning that the older people are willing to pay more for consuming organic chicken. However, it is insignificant and negatively related with the WTP for

organic milk. In the literature, the age is generally positively related with the WTP for organic foods (Dettmann and Dimitri, 2010; Govindasamy and Italia, 1999; Loureiro and Hine, 2001; Millock and Hansen, 2002; Van Doorn and Verhoef, 2011; Wang and Sun, 2003).

In general, education variable is negatively related with the price premium paid for organic chicken while the university degree is specifically significant and positively related with the WTP for organic milk. In the literature also, the effect of education level on the WTP decision for organic food stuff is ambiguous. In some studies, some levels of education is positively related with price premium (Batte et al., 2007; Bernard and Gifford, 2006; Dettmann and Dimitri, 2010; Rousseau and Vranken, 2011). However, some studies find a negative effect of education on willingness to pay (Van Doorn and Verhoef, 2011; Bernard and Gifford, 2006; Gil et al., 2000; Govindasamy and Italia, 1999; Misra et al., 1991). Lastly, income level is the most significant variable in the case of chicken and positively affects the WTP for organic chicken as in most of the studies in literature (Donaghy et al., 2003; Govindasamy and Italia, 1999; Misra et al., 1991; Rodriguez et al., 2008). Although income is not significant in the milk case, it still provides a positive effect on price premium paid over the conventional product's price.

The two variables that we expect to be positively related to WTP are household size and presence of children in the household. In most of the studies, presence of children has a positive effect on price premium for organic foods since people care about their children (Batte et al., 2007; Bernard and Gifford, 2006; Huang, 1996). The findings in our study for organic chicken are also consistent with these studies. However, as the age of the children increases, the WTP amount decreases. In contrast with the former result, WTP for organic milk decreases with the presence of children in the family as in the case of Loureiro and Hine (2001). The household size is taken into account in chicken sample, and it is negatively related with the WTP as expected (Govindasamy and Italia, 1999; Wang and Sun, 2003). From habitual variables, food knowledge and previous organic food consumption frequency are found to be significant and positively related with the WTP for

organic chicken and milk (Diaz et al., 2012; Donaghy et al., 2003; Rodriguez et al., 2008).

When we look at the studies conducted in Turkey, our results match with the findings of some of these studies. For example, none of these studies mention a significant positive relationship with the gender and willingness to pay like in our case. In studies of Armağan and Özdoğan (2005); and Göktolga and Esengün (2009), the gender is positively related with the WTP although it is not significant. Akgüngör et al. (2007) and Gündüz and Bayramoğlu (2011) find a positive and significant relation with the income and willingness to pay for organic foods like in our chicken case. However, in contrast to the findings of Akgüngör et al. (2007), Gündüz and Bayramoğlu (2011) and Armağan and Özdoğan (2005) claim that the education level is positively related with the willingness to pay. Similar to Akgüngör et al. (2007) we find a negative relation among these two variables. In addition, Ergin and Özsaçmacı (2010) mention that the previous consumption of organic foods is positively related with the WTP which is completely in line with the findings of this study.

In monetary values, the willingness to pay is about 26 TL for organic chicken, and 7.7 TL for organic milk. In the analysis, we take the market price of regular whole chicken as 7 TL/kilo; and when we make the required calculations, it is seen that the respondents are ready to pay up to 271% of the conventional chicken price in order to consume organic chicken. For the organic milk, this number corresponds to 285% when we take the market price as 2 TL/liter. In the studies we have examined here, the WTP for various organic foods are up to about 202% of the conventional food items. So, the price premiums found in this study may be considered as exaggerated. However, as we have mentioned before, the residents of Kuşadası take the advantages of wild herbs and the food stuff grown in natural conditions. Therefore, they are more familiar with the notion of consuming organic foods. Also, when the prices of organic milk and chicken are investigated in national markets, it can be seen that the prices may be up to 37 TL for chicken and 10 TL for milk.

CHAPTER 6

CONCLUSION

This study aims to find the willingness to pay for organic milk and chicken as well as the perceptions of people for organic foods in general and for those specified products. In eliciting the required information, face-to-face surveys with double bounded contingent valuation setting is utilized. The econometric analysis is conducted by using double bounded logit model in STATA/SE 11.2. The surveys are conducted with randomly selected people in different parts of Kuşadası in order to represent all groups.

First of all, socio-demographic characteristics of the respondents are explained along with the descriptive variables. The consumption habits, knowledge about the organic foods, the sources from which they get information are explained. Then, the independent variables are used intuitively in the model in order to find the willingness to pay for a group of variables or the marginal values associated with specific variables.

As the econometric analysis shows, the females at an older age and smaller household size are willing to pay more price premiums for organic chicken; while the presence of children at the ages 0-2 and 3-6 is leading to a higher willingness to pay. Also, the willingness to pay increases as income gets higher. The other factors that affect WTP in chicken subsample are knowledge about food and food security, and prior organic food consumption. In milk subsample, the females are again willing to pay more for organic milk. However, age is negatively related this time with younger people who are willing to pay more for organic milk but this variable is insignificant as in the case of chicken. The presence of children in the family is again significant but has a negative effect on WTP. Food related illness is another

variable that is significant in chicken sample again with a negative effect surprisingly. Two of the employment status variables are also found to be significant: self-employed and pensioners. We thought that this might be related to the amount of income and some certain types of physical sickness. Also, as the education level increases, the WTP of people decrease as they become more skeptical. Finally, as in the case of chicken subsample, food knowledge and prior organic food consumption are related with the respondents' decision to pay more for organic milk.

The willingness to pay is found to be about 26 TL for organic chicken, and 7.7 TL for organic milk. These numbers correspond to 271% and 285% price premiums for organic chicken and milk, respectively. As we have mentioned before, we can evaluate chicken and milk under different categories in terms of processes they have undergone. According to this classification milk is a processed product since it can be consumed after packaging, chicken can be counted as unprocessed since it has to be cooked before eating. If we were to investigate in terms of processed and unprocessed foods, their price premiums are nearly the same in percentages. So, we might not conclude that there is a difference among WTP for processed and unprocessed foods.

In conclusion, this study underlines the potential characteristics and habits of the consumers which affect their decisions to buy organic foods along with a CV model and double bounded logit approach. This study provides a different econometric model compared to the studies done for Turkey about organic foods and estimates the WTP for organic chicken and milk. Our analysis also highlights the characteristics of the organic chicken and milk consumers in Kuşadası. As a future research agenda, this model may be used with a broader geographical area and for a wider range of organic products, by having a larger sample of respondents.

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APPENDIX I: CONSUMER SURVEY

CONSUMER SURVEY ABOUT

ORGANIC FOOD PREFERENCES

- This survey is prepared to be used in master thesis study at the Middle East Technical University, Department of Economics.
- The answers to all questions in this survey will be kept confidential, and will be used only for this study.
- You are not required to provide your name and address information in the survey.
- There are no true or false answers to the questions in the survey. Your provision of sincere information will help the study to be more accurate.
- You can quit the survey at any time you want.

Thank you for your time.

LOCATION:……..
DATE : ……

A. SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Gender: a) Female b) Male

2. Age, please specify: ……

3. Current employment status*:

a) Civil servant/worker b)Craftsman/merchant/businessman
c) Pensioner d) Housewife
e) Student f) Unemployed/Job seeker
g) Other, please specify: ……...

***If you have a food related occupation (food engineer, agricultural engineer, farmer, dietician, etc.), please specify:**……

4. Education status:

a) Primary School b) Middle School
c) High School d) Technical School/College
e) Undergraduate f) Graduate
g) Post-graduate

5. Please indicate the number of people live in your household (including yourself): ……

6. Please specify the number of children under the age of 18 in your household according to the age categories:

a) Between 0-2 : …….
b) Between 3-6 : …….
c) Between 7-18 : ……

7. In which part of Kuşadası you live (e.g: Merkez, Kirazlı, Ağaçlı), please indicate:……

8. How much time do you spend in Kuşadası per year? Please indicate:……..

9. What is your total monthly income (by all members of the household)?

a) 0-750 TL b) 751- 1.500 TL c) 1.501-2.500 TL
d) 2.501-5.000 TL e) 5.001-10.000 TL f) 10.000 TL and more

10. What is your household's monthly food expenditure (including the meals eaten outside)? Please indicate:……

11. Do any of your family members have nutrition related health problems*?

a) Yes, please explain: …….

b) No

*Illnesses or diseases caused not only by genetic characteristics, but also affected by nutrition habits; such as cardiovascular diseases, cancer, hypertension, diabetes, etc. as a consequence of malnutrition or over nutrition.

B. CONSUMPTION HABITS

12. Are you familiar with the concept of "organic food''?

a) Yes b) No

13. In your opinion, which of the following statements defines "organic food" best?

a) The foods produced under healthy and safe conditions, have a well physical appearance and have no deformation

b) Self-grown foods without intervention to natural environment (e.g. without ploughing the land, or using agricultural chemicals)

c) Foods produced without the use of chemical substances in an environmental friendly way, and genetically unmodified

d) Genetically unmodified, but yielded with chemicals in order to fight against harmful organisms, and conserve the physical form of the product.

14. How often do you purchase organic food?

a) Never b) Seldom c) Sometimes

d) Usually e) Always

15. What are the reasons to prefer organic foods to you? Please rank the first three of them.

a) More delicious than conventional ones……

b) Not genetically modified……

c) Not contain chemicals, so it is healthier……

d) Environmentally friendly…….

e) Usually produced domestically, so help to support the local economy….

f) Benefits sustainability and the future generations……

g) Other, please explain: ……

16. Do you have any concerns of using organic food? Please rank first two of them.

a) Expensive…… b) Lack of availability……
c) Untrustworthiness…… d) unsatisfactory physical appearance……
d) Other, please explain: ……..

17. Where did you buy organic food?

a) Supermarkets b) Local markets
c) Groceries d) Organic Markets
e) Producer f) Other, please explain: …….

18. When buying organic food, do you check whether the product is certified?

a) Yes, I do.
b) No, I trust the seller.
c) Other, please explain: ……

19. Do you think the conventionally produced foods (i.e. the production type that use of chemicals, synthetic fertilizers, and growth hormones are allowed in order to produce more intensively) are harmful?

a) Yes b) No

20. Rank the three of below mentioned negative consequences claimed to be caused by conventionally produced foods in order of importance to you.

a) More and pesticide use every time as the result of immunity to chemicals
b) Decrease in biological diversity……
c) Immune of consumers to antibiotics as a result of residue of antibiotics in foods
d) Health risks caused by microorganisms transmitted by food such as typhoid, dysentery, etc.……
e) Chemicals -such as DDT- causing infertility, some types of cancer, hormonal disorders, and learning disorder by affecting endocrine system…...
f) Destruction on neural system …….

21. How often do you get information on food and food safety (except recipes)?

a) Not much
b) Seldom
c) Sometimes, when I see the interesting ones. Please exemplify:……
d) Usually, I do research actively. Please exemplify:……

22. Which of the following sources do you utilize in getting information about food safety? Rank three of them according to the frequency of usage.

a) TV/Radio …… b) Books/ Newspapers/ Magazines ……..
c) Internet …….. d) Official institutions…….
e) Food certification institutions….. f) Doctor/Nutritionist/Dietician…..
g) Academic studies …… h) Information on food packages …
i) Family/ Friend ……

23. Do you rely the information that you obtain from selected resources above?

a) Yes b) No

24. In your opinion, which of the followings should be responsible from food safety?

a) Official Institution b) Local Administration
c) Food Certification Agencies d) Manufacturer
e) Consumer Associations f) Consumers

C. CONTINGENT VALUATION

25. How often do you consume chicken?

a) I do not b) Once in a month c) Twice in a month
d) Weekly e) Once in 3-4 days f) Everyday

26. Are you suspicious whether the chicken you consume is organic?

a) Yes b) No

27. Below you will find some features of the milk you consume. Please, rank these through 1 to 7 from the most important to least; i.e. order of importance.

a) Price…… b) Nutrition value …… c) Freshness …….
d) Taste …… e) Being produced without antibiotics……...
f) Brand …… g) Being locally produced or imported …
h) Type of production (Chickens' being fed under natural circumstances or industrial facilities and human interventions) …….

28. In a usual shopping incidence, you see two choices of chicken in the poultry section: the one is conventionally produced chicken (produced in integrated facilities by using antibiotics, hormones and subjected to artificial light) and the other is organically produced chicken (produced under natural circumstances, fed with organic feeds, without using antibiotics).

Suppose that the industrially produced whole chicken is priced as 7.00 TL per kilo. Would you pay 28.00 TL for the organic one?

a) Yes, (If "yes", pass to question 28/1).
b) No, (If "no", pass to question 28/2).

28/1. For the organic form of this product, do you pay 35.00 TL per kilo?
a) Yes b) No

28/2. For the organic form of this product, do you pay 21.00 TL per kilo?
a) Yes b) No (If "no" pass through 28/3)

28/3. If your answers are "no" to both question, what is the reason?
a) I do not consume chicken meat.
b) I can pay a little bit more; but mentioned prices are too high. (Please specify how much more you can pay……..)
c) I prefer conventional one since the organic chicken meat takes too much time to be cooked.
d) I think conventional production should be prohibited; organic production should be encouraged and prices should be pulled down to reasonable level.
e) I do not care how it is produced.
f) Other, please explain:
……..

THANK YOU.

RENGİN M. AYHAN

APPENDIX III. EXTENDED TURKISH SUMMARY

1. Giriş

İlk zamanlarda organik gıdalar marjinal bir kesimin ihtiyaçlarını karşılamaya yönelik ürünler olarak algılansa da, zaman içinde organik gıdalara verilen önem arttı (Urena vd., 2007). 1999 yılından bu yana organik gıda üretimine ayrılan tarım alanları üç katına çıktı ve pek çok tüketici kesimi tarafından bu ürünler tercih edilmeye başlandı (Willer ve Lernoud, 2013). Dünyanın çeşitli bölgelerinde yapılan çalışmaların da gösterdiği üzere, organik gıda tüketiminin temel sebepleri bu gıdaların sağlıklı, lezzetli ve çevre dostu olarak görülmesidir.

Organik gıdalara olan talepteki bu artış, literatürde de bu konudaki çalışmaların artmasına sebep oldu. Biz de bu çalışmada, organik süt ve tavuk tüketmek için tüketicilerin vermek istedikleri fiyat primini bulmaya ve tüketicilerin bu davranışlarının altında yatan motivasyonları anlamaya çalıştık. Bu amaca yönelik olarak, çift kısıtlı dikotom (ikili) seçim koşullu değerleme metodundan faydalanılarak hazırlanan anketler 720 kişi üzerinde uygulandı. Ekonometrik analizlerde ise çift kısıtlı logit modeli kullanıldı.

2. Literatür Taraması

Literatürdeki çalışmalar genel olarak tüketicilerin sosyo-demografik özelliklerinin fiyat primine olan etkisi üzerinde durmuşlardır. Örneğin, organik gıda tüketimi için genelde kadınlar erkeklerden daha fazla para ödemeye razıdırlar (Gil vd., 2000; Govindasamy ve Italia, 1999; Sakagami ve Haas, 2012; Van Doorn ve Verhoef, 2011). Donaghy vd. (2003)'nin çalışmasında ise aksi bir duruma rastlanmaktadır. Avustralya'daki erkekler, organik domatesler için kadınlardan daha fazla fiyat ödemeye razı olmaktadırlar. Eğitimin fiyat primi üzerindeki etkisi ise çok belirgin değildir. Eğitim seviyesi ile tüketicilerin ödemeye razı oldukları miktar üzerinde olumlu bir ilişki beklenmesine rağmen (Batte vd., 2007; Bernard ve Gifford, 2006; Dettmann ve Dimitri, 2010), bazı çalışmalarda negatif bir ilişki bulunmaktadır (Van

Doorn ve Verhoef, 2011; Bernard ve Gifford, 2006; Dettmann ve Dimitri, 2010). Bunların haricinde gelir, fiyat primini olumlu yönde etkileyen en önemli değişkendir (Donaghy vd., 2003; Govindasamy ve Italia, 1999; Misra vd., 1991; Rodriguez vd., 2008). Ayrıca yaş da genel olarak bu primi olumsuz etkilemektedir (Dettmann ve Dimitri, 2010; Govindasamy ve Italia, 1999; Loureiro ve Hine, 2001; Millock ve Hansen, 2002; Van Doorn ve Verhoef, 2011; Wang ve Sun, 2003). Hanehalkı nüfusundaki artış da ayrıca kişi başına düşen geliri azaltarak fiyat primini olumsuz etkilemektedir (Govindasamy ve Italia, 1999; Wang ve Sun, 2003). Sonuç olarak organik gıda tüketicilerinin profili genelde yüksek gelir ve eğitim gruplarından gelen genç kadınlar ile çocuklu ailelerdir.

Bunun yanında bazı araştırmacılar verilmek istenen fiyat primini ürüne ait özellikler (tazelik, yöresellik, marka, üretim metodu vb.), bireysel motivasyonlar (çevre hakkındaki endişeler, sağlık, hayvan sağlığı vb.) veya tüketim alışkanlıkları (tüketim sıklığı, erişilebilirlik, önceki tüketimler vb.) ile açıklamaya çalışmaktadırlar (Loureiro ve Hine, 2001; Donaghy vd., 2003; Rodriguez vd., 2008; Batte vd., 2007; Van Doorn ve Verhoef, 2011). Krystallis vd. (2008) ile Diaz vd. (2012) tüketicileri bilinç seviyelerine göre sınıflarken, Hamzaoui-Essoussi ve Zahaf (2012) ile Gil vd. (2000) tüketicilerin yaşam tarzlarına ve organik gıda tüketim sıklıklarına odaklanarak bir sınıflama yapmaktadır. Daha sonra araştırmacılar bu sınıflamalara göre fiyat primlerinin farklılık gösterip göstermediğine bakmaktadırlar. Batte vd. (2007) ise farklı bir kritere göre (tüketicilerin gıdalarını temin ettikleri yer) sınıflama yapmaktadır ve yazarlara göre organik gıdalar için özelleştirilmiş mağazalardan alışveriş yapan tüketiciler diğerlerine göre daha fazla ödemeye razı olmaktadırlar.

Organik gıdalar için ödenmek istenen fiyat primi ülkeye, zamana ve ürüne bağlı olarak da değişebilir. Tüm bu etkenler ürünle ilgili piyasanın ne kadar oturmuş olduğunu etkileyerek fiyat primlerinde farklılıklara yol açmaktadır. Örneğin, Yunanistan için buraya ait beslenme tarzının elementi olan ürünlerle yapılan bir çalışmada fiyat primi %55-%100 arasında değişirken (Krystallis vd., 2008), Danimarka için bulunan primler daha stabil olup %41-%59 arasında yer almaktadır (Millock ve Hansen, 2002). Bir başka çalışmada "ihtiyaç" olarak tanımlanan

ürünlerde fiyat primi, "istek" olarak tanımlanan ve kısa vadede zevk, uzun vadede zarar veren ürünlerinkine oranla daha az çıkmıştır. Zaman açısından literatürdeki çalışmalara bakıldığında ise stabil bir trend görülmemektedir. Yukarıda belirtilen diğer faktörler de fiyat primi üzerinde etkili olmaktadır.

Türkiye'de yapılan çalışmalar ise daha kısıtlıdır. Armağan ve Özdoğan (2005) Aydın'da yürüttükleri çalışmalarında, 384 kişi ile yaptıkları anket sonucunda organik yumurta ve tavuk eti için %30'luk bir fiyat primi bulmuşlardır. Gelir ve eğitim seviyesi arttıkça insanlar daha fazla organik gıda tüketmektedirler. Organik gıda tüketimini etkileyen en önemli sebepler ise gıda güvenliğinin yanı sıra bu gıdaların daha sağlıklı ve lezzetli olmasıdır. Akgüngör vd. (2007) ise İstanbul ve İzmir'de 202 kişi ile yaptıkları anket sonucunda tüketicilerin, üretiminde pestisit kullanılmamış ve etiketlenmiş domatesler için %36 daha fazla ödemeye razı olduklarını bulmuşlardır. Ayrıca, çalışmaya göre eğitim, gelir ve yaş, fiyat primini olumlu etkileyen faktörler arasındadır. Göktolga ve Esengün (2009) ise Tokat'ta GDO'suz domates için bir çalışma yapmışlardır. 262 kişi ile yapılan bu çalışmaya göre hanehalkı büyüklüğü, aylık gelir, aylık gıda harcamaları ve katılımcıların konu hakkındaki endişeleri fiyat primi üzerinde etkili olmaktadır. Diğer çalışmaların aksine gelir, fiyat primini olumsuz etkilemektedir. Budak vd. (2006)'nin çalışmasına göre organik deniz levreği tüketenler genelde genç, evli, eğitimli ve 10 yaşın altında çocuğu olmayan kesimdendirler. 253 tüketici üzerinde yapılan ankette fiyat primi yaklaşık olarak %11-%30 arasında çıkmıştır. Gündüz ve Bayramoğlu (2011) tarafından yapılan benzer bir çalışmada yine organik tavuk üzerinde durulmuştur. Samsun'da 150 kişi üzerinde yapılan anket sonucunda katılımcıların %6-%10 daha fazladan ödemeye razı olduğu; gelir ve eğitim düzeyi ile önceki tavuk tüketiminin fiyat primi üzerinde etkisi olduğu görülmüştür. Son olarak Ergin ve Özsaçmacı (2010)'nın, İstanbul ve Ankara'da 215 kişi üzerinde yaptıkları anket sonucunda tüketicilerin güven ve sağlık konusundaki endişelerinin organik gıdaların tüketim sıklığını etkilediği görülmüştür.

Bu çalışmada çift kısıtlı dikotom seçim modeli uygulanmıştır. Böylece tüketicilerin ödemek istediği fiyat priminin daha doğru bir şekilde bulunması amaçlanmıştır.

Çalışma Kuşadası'nda yapılmıştır. Turizm faaliyetleriyle bilinmesinin yanı sıra, Kuşadası kültürel ve tarımsal aktivitelere de ev sahipliği yapmaktadır. Özellikle Kirazlı köyü, organik tarım ve ekolojik turizm faaliyetlerinde öne çıkmaktadır.

3. Metodoloji

Koşullu değerleme metodu, çevresel değerleme metodlarından biri olup piyasası olmayan çevresel mal ve hizmetlere parasal bir değer yüklemek için kullanılmaktadır. Kullanım değeri haricindeki değerlerin hesaba katılmaması, toplam ekonomik değerin olduğundan daha az hesaplanmasına ve etkin olmayan kararların verilmesine sebep olmaktadır. Diğer çevresel değerleme metodları kullanım değeri haricindeki değerleri bulmakta zayıf kalırken, koşullu değerleme metodu bu değerleri bulmakta başarılı bir yöntemdir.

Söz konusu olan mal veya hizmete yönelik bilgi sağlanmasında yetersiz kalması, bağlayıcı olmaması sebebiyle katılımcıların abartılı veya duygusal kararlar vermesi, anketi protesto etmek için geçersiz cevaplar vermeleri veya hiç cevap vermemeleri gibi yönlerden eleştirilmesine rağmen, ilk kez önerildiği 1960'lı yıllardan beri uygulanmaktadır. Özellikle de 1990'ların başından itibaren hem metod geliştirilmiş, hem de uygulama alanı genişletilerek ekonominin sağlık, taşımacılık, tarım vb. alanlarında uygulanmaya başlanmıştır. Öncelikli olarak piyasası olmayan mal ve hizmetler için kullanılsa da erişilebilirlik problemleri olan ve tam olarak olgunluğa erişmemiş piyasalarda da kullanılabilmektedir. Bu çalışmada, koşullu değerleme metodunun çift kısıtlı dikotom şekli ile değerleme soruları sorulmuştur. Bu yöntemde varsayımsal senaryo tanımlandıktan sonra, söz konusu mal veya hizmet için ilk fiyat önerilmektedir. Bu fiyata verilen cevaba göre de ikinci teklif verilmektedir. Eğer katılımcının ilk fiyata verdiği cevap evet ise daha yüksek bir teklif, hayır ise daha düşük bir teklif yapılmaktadır. Böylece katılımcılarının söz konusu mal veya hizmet için ödemek istedikleri fiyat aralıkları belirlenmeye çalışılmaktadır.

Datanın ekonometrik olarak analiz edilmesinde çift kısıtlı koşullu değerleme metoduna özgü bir model olan çift kısıtlı logit modeli kullanılmıştır. Bu modelle yapılan analizler aşağıda anlatılmıştır.

4. Anket

Anketlerin hazırlanmasında National Oceanic and Athmospheric Administration (NOAA) Panel'inde hazırlanan kurallar takip edilmiştir. Katılımcıları motive etmek ve önyargıları azaltmak amacıyla gerçeğe yakın bir senaryo tanımlanmıştır (Hoevenagel, 1994; Portney, 1994). Ayrıca katılımcılarla yüzyüze anketler yapılarak hem katılımın artması hem de önyargıların azaltılması amaçlanmıştır. Ayrıca ankette katılımı arttırmak için açık uçlu sorulara pek yer verilmemiştir. 10 kişi üzerinde yapılan pilot çalışma sonucunda anket sadeleştirilmiş ve kısaltılmıştır. Son anket üç bölümden oluşmaktadır. Birinci bölümde katılımcıların cinsiyet, yaş, gelir, eğitim durumu, hanehalkı nüfusu, ailedeki 18 yaş altı çocuk sayısı gibi sosyo-demografik bilgileri öğrenilmeye çalışılmıştır. İkinci bölüm katılımcıların diyet ve beslenme, gıda güvenliği ve güven gibi konulardaki görüşlerini öğrenmek için tasarlanmıştır. Üçüncü bölüm ise tüketim alışkanlıkları ile ilgili soruların yanında koşullu değerleme senaryosunu da içermektedir.

Çalışmada süt ve tavuk incelenecek ürünler olarak seçilmiştir. İkisi de Türk beslenme alışkanlıklarının önemli bir parçası olup çok da fazla ikameleri bulunmamaktadır. Süt özellikle çocukların kemik gelişimi için bir protein kaynağı olarak görülmektedir. Tavuk ise göreceli olarak ucuz bir protein kaynağı olması sebebiyle her kesim tarafından tüketilmektedir. Anketlerde tavuk için beş farklı, süt içinse dört farklı teklif fiyatı kullanılmıştır. İlk fiyattan sonraki fiyatlar, ilk cevaba bağlı olarak %25 arttıtılmış veya azaltılmıştır. Bizim çalışmamızda fiyatlar, zaten söz konusu olan malların doygunluğa ulaşmamış olsa da bir piyasası olduğu için bu fiyatlara göre belirlenmiştir.

5. Örneklem Özellikleri ve Data Analizi

Elde edilen datayı anket üzerinden tek tek sorularla incelediğimizde, hem süt hem de tavuk grubunda kadınların oranının %60'tan biraz fazla olduğunu görürüz (S.1). Bunun nedeni ise, ailede genelde gıda alışverişlerini kadının üstlenmesi ve katılımın da bu sebeple kadınlarda daha fazla olmasından kaynaklanmaktadır. Yaş dikkate alındığında (S.2) her iki grup için de yaş ortalamalarının birbirine yakın olduğu görülmektedir: tavuk örneklemi için 42.07 ve süt örneklemi için 41.3 olarak bulunmuştur. Çalışma durumu ile ilgili soruya bakıldığında (S.3) her iki örneklemde de en büyük grubun özel sektörde veya kamu sektöründe çalışan işçiler olduğunu görürüz. Bu grup emekliler ve kendi işini yapanlar tarafından takip edilmektedir. Eğitim seviyesinde ise (S.4), katılımcıların çoğunluğunun lise veya üzeri bir eğitim seviyesinde olduğunu görürüz. Ortalama eğitim seviyesi ise her iki grup için de lise ile yüksekokul arasında yer almaktadır.

Sosyo-demografik değişkenlerin yanında, tüketim alışkanlıkları ve organik gıdalar üstüne tüketici algıları ile ilgili sorulara da yer verilmiştir. Buna göre, katılımcılara organik gıdanın çoklu şıklar arasından en yakın tanımı sorulduğunda (S.13) yaklaşık %23'ü bir önceki soruda organik gıdalara aşina olduklarını belirtseler de doğru cevabı verememişlerdir. Katılımcıların tavuk örnekleminde yaklaşık %6'sı, süt örnekleminde ise yaklaşık %2'si hariç tüm katılımcılar organik gıdaları en azından bir kere denemişlerdir (S.14). Organik gıda tüketimindeki sebepler araştırıldığında (S.15) her iki örneklem için de en önemli sebeplerin sağlıkla ilişkili olduğu görülmektedir. Organik gıdaların kimyasallar içermemesi ve genetiğiyle oynanmış olmaması sebeplerini lezzetli olması izlemektedir. Çevre dostu olması, sürdürülebilirliğe katkıda bulunması ve genellikle yerel üretildiği için yerel ekonomiye katkıda bulunması gibi sebepler en sonda yer almaktadır. Tüketicileri organik gıda tüketmekten alıkoyan sebepler sorulduğunda ise (S.16) bunların tavuk örneklemi için sırasıyla pahalı olması, erişilebilirlik problemleri, güvensizlik ve fiziksel görünüm olduğu görülmüştür. Süt örnekleminde ise ilk neden sabitken, güvensizlik ve erişilebilirlik problemleri yer değiştirmiştir. Katılımcıların çoğu, organik diye nitelendirdikleri ürünleri alırken satıcıya sertifika sormamaktadırlar (S.18). Kimileri özel olarak organik gıda satan yerlerden gıdalarını temin ederken,

kimileri tanıdıkları satıcılardan alışveriş yapmakta, kimileri ise sadece kendileri bakarak organik gıdaları ayırt etmeye çalışmaktadırlar. Sertifika sorulmamasının en öenmli sebebi, katılımcıların her iki örneklem için de yaklaşık %60'ının yerel pazarlardan alışveriş ediyor olmasıdır. Yerel pazarlarda setifikalama alışkanlığı olmadığı için, tüketiciler de sormadıklarını belirtmişlerdir.

Katılımcıların tavuk örneklemi için 307 kişiden 290'ı, süt örneklemi için 306 kişiden 288'i konvansiyonel gıdaların zararlı olduğunu düşünmektedir (S.19). Katılımcıların en çok önemsediği zarar her iki grup için de konvansiyonel gıdaların hormonal bozukluklar oluşturarak kısırlık, bazı kanser türleri, erkeklerde kadınsılaşma, öğrenme bozukluklarına vb. sebep olmasıdır (S.20). Sinir sistemi üzerindeki tahribat ile zararlılarda kimyasal maddelere karşı oluşan bağışıklık sonucu her seferinde daha fazla kimyasal madde kullanımı bunu takip etmektedir. Katıımcıları en az endişelendiren zarar ise biyolojik çeşitlilikteki azalmadır. Katılımcıların çoğunluğu konvansiyonel yöntemlerle üretilen gıdaların zararlı olduğunu düşünmekle birlikte, gıda ve gıda güvenliği hakkında pek fazla bilgi edinmemektedirler (S.21). Katılımcıların yaklaşık %62'si neredeyse hiç bilgi edinmemekte ya da nadiren bilgi edinmektedir. Yalnızca %21'i "bazen", %17'si ise "aktif olarak" gıda ve gıda güvenliği konusunu araştırmaktadırlar. Bu bilgilerin edinilmesinde televizyon/radyo yayınları ve internet her iki grup için de öne çıkan kaynaklardır (S.22). Bu iki kaynağı sırasıyla doktor/diyetisyen/beslenme uzmanı, gazete/kitap/dergi, aile/arkadaş, gıda paketleri üzerindeki bilgiler, gıda sertifikalama kuruluşları takip etmektedir. Son olarak da tavuk örneklemi için resmi kurumlar ve akademik çalışmalar yer alırken, süt örneklemi için bu iki kaynağın sıralaması tam tersidir.

Ekonometrik analizlerde daha önce de belirtildiği gibi çift kısıtlı logit modeli kullanılmıştır. Bunun için öncelikle fiyat primini bulmakta kullanılacak değişkenler oluşturulmuştur. Daha sonra regresyonlar STATA'da çalıştırılarak her bir değişkenin fiyat primini ne kadar etkilediği ve her regresyonda fiyat priminin ne kadar olduğu bulunmuştur. Regresyonlarda Akaike Bilgi Kriteri'nin minimum düzeyde olmasına dikkat edilmiştir.

Tavuk örnekleminde, ilk olarak regresyon kontrol değişkenleri olmadan çalıştırılmıştır. Bunun sonucunda tüketicilerin ödemek istediği fiyat bütün tavuğun kilosu için yaklaşık 26 TL olarak bulunmuştur. Kontrol değişkenleri dikkate alındığında ise sonuçlar şöyledir. Cinsiyet değişkeni anlamlı bulunmasa da çoğu çalışmada olduğu gibi kadınlar organik tavuk için erkeklerden daha fazla vermek istemektedirler (Gil vd., 2000; Govindasamy ve Italia, 1999; Sakagami ve Haas, 2012; Van Doorn ve Verhoef, 2011). Genelde kadınlar ailede gıda alışverişini yaptığı ve yemekleri hazırladığı için, sağlıklı gıdaların tüketimi konusunda daha hassas oldukları düşünülmektedir. Ayrıca yaş arttıkça insanlar daha tecrübeli ve bilgili olmaktadırlar. Bu yüzden de yaş değişkeninin fiyat primini pozitif olarak etkilediği düşünülmekte ve gözlemlenmektedir. 18-30 yaş aralığındaki kadınlar kilogram başına 23.95 TL vermeye razı iken, 30-45 yaş aralığında bu rakam 26.10 TL, 45-60 yaş aralığında 28.23 TL ve 60+ yaş grubunda ise 30.38TL'dir. Erkeklerde ise bu miktarlar yine aynı yaş grupları için sırasıyla 22.35 TL, 24.50 TL, 26.63 TL ve 28.77 TL'dir. Eğitim durumu istatistiksel olarak anlamlı bulunmasa da, fiyat primini olumsuz etkilemektedir (Batte vd. 2007; Bernard ve Gifford, 2006; Gil vd., 2000; Govindasamy ve Italia, 1999; Misra vd., 1991). Eğitim seviyesi arttıkça tüketicilerin daha şüpheci olduğu düşünülmektedir. Ayrıca hanehalkı nüfusu da kişi başına düşen ortalama geliri düşürerek fiyat primini olumsuz etkilemektedir (Govindasamy ve Italia, 1999). Ailede çocuğun varlığı ise fiyat primi üzerinde olumlu bir etki yaratmaktadır. 0-2 yaş grubu ile 3-6 yaş grubu istatistiksel olarak anlamlı bulunmuştur. Fakat ailedeki çocuğun yaşı arttıkça fiyat priminin miktarı azalmaktadır.

Sosyo-demografik değişkenlerin yanı sıra davranışsal ve alışkanlıklara ilişkin değişkenler de ele alınmıştır. Gıda ve gıda güvenliği üzerine bilgi edinilmesi de fiyat primi üzerinde etkili olmaktadır. Bu regresyonda değişkenler ortalama değerlerinde alındığında fiyat primi 26 TL olarak bulunmuştur. Tüketiciler bilgi edindikçe organik tavuk için daha fazla ödemeye razıdırlar. Fiyat primini açıklayan ve olumlu olarak etkileyen bir diğer değişken de tüketicilerin önceden yapmış olduğu organik gıda tüketimidir. Halihazırda organik gıda tüketmekte olan tüketiciler için organik

tavuk tüketme ve bunun için ekstradan bir para ödeme kararını vermek daha kolay olmaktadır. Hiç organik gıda tüketmeyen veya nadiren organik gıda tüketen katılımcıların ortalama fiyat primi 18.53 TL olarak bulunurken, organik gıda tüketim sıklığı arttıkça fiyat primi de 20.85 TL ve 23.16 TL'ye çıkmaktadır. Bunun dışında organik gıdalarını kendisi üretenler de organik gıdalar için fazladan para ödemeye razıdırlar.

Süt örnekleminde de aynı adımlar takip edilmiştir. Kontrol değişkenleri olmadan çalıştırılan regresyonda tüketicilerin ödemek istedikleri fiyat primi yaklaşık 7.7 TL olarak bulunmuştur. Hem yaş hem de cinsiyet süt örnekleminde istatistiksel olarak anlamsız bulunsa da etkileri incelenmiştir. Tavuk örnekleminde olduğu gibi kadınlar burada da organik gıdalar için erkeklerden daha fazla vermeye razıdırlar; fakat yaş değişkeni süt örnekleminde negatif bir etkiye sahiptir. Gençler organik süt tüketimi için yaşlılara göre daha yüksek bir fiyat primine sahiptirler (Dettmann ve Dimitri, 2010; Govindasamy ve Italia, 1999; Loureiro ve Hine, 2001; Millock ve Hansen, 2002; Van Doorn ve Verhoef, 2011; Wang ve Sun, 2003). Tekrar yaş gruplarına göre (18-30 yaş, 31-45 yaş, 46-60 yaş ve 60+ yaş) fiyat primlerine bakıldığında miktarların şu şekilde olduğu görülmüştür. Kadınlarda sırasıyla 8.03 TL, 7.84 TL, 7.64 TL, 7.45 TL'dir; erkeklerde ise sırasıyla 7.78 TL, 7.59 TL, 7.40 TL ve 7.20 TL'dir. Ailede çocuğun varlığı dikkate alındığında etkisinin negatif olduğu görülmüştür. Özellikle de 0-2 yaş arası anlamsız olarak bulunmuştur. Bunun sebebi yeni doğan grubundaki çocukların zaten anne sütüyle beslenmesi ve halihazırda piyasada bu gruba yönelik ek besinlerin yer alması olarak görülmektedir.

Bunun haricinde kendi işinin sahibi olma, emekli grubunda bulunma, üniversite mezunu olma, şehir merkezinde yaşama, gıda ile ilgili hastalık vb. değişkenler de fiyat primi üzerinde bir etkiye sahiptirler. Kendi işinin sahibi olanlar organik süt tüketimi için ekstra para ödemeye razıdırlar, bu da kendi işini yapanların işçilere göre daha fazla kazanabilme ihtimalinden kaynaklanıyor olabilir. Süt örnekleminde yaş ile fiyat primi arasında olumsuz bir ilişki olsa da, emekli olmak fiyat primini arttırmaktadır. Fiyat primindeki bu artışın, yaşlı kişilerin osteoporoz hakkındaki endişelerinden kaynaklandığı düşünülmektedir. Tavuk örneklemindeki gibi burada

da eğitimin negatif bir etkisi bulunmaktadır. Tüketicilerin eğitim seviyesi arttıkça şüphecilikleri de artmakta ve organik gıdalar ile gıda güvenliği hakkında şüphe etmektedirler. Gıda ile ilgili hastalık ise şaşırtıcı bir şekilde fiyat primini olumsuz etkilemektedir.

Tavuk örnekleminde olduğu gibi, gıda ve gıda güvenliği hakkında edinilen bilgi arttıkça, organik süt için verilen fiyat primi de artmaktadır. Gıda ve gıda güvenliği hakkında "nadiren" bilgi edinen bir kadın için fiyat primi 7.62 TL iken, bu kişi "bazen" bilgi edindiğinde fiyat primi 8.60 TL'ye, "aktif olarak" edindiğinde ise 9.59 TL'ye çıkmaktadır. Erkeklerde ise bu rakamlar sırasıyla 7.74 TL, 8.72 TL ve 9.71 TL'dir. Yine süt örnekleminde de organik gıdaların önceki tüketimleri organik süte karşı olan fiyat primini olumlu olarak etkilemektedir. Halihazırda organik gıda tüketmekte olan kişiler, organik süt tüketip tüketmemek yerine sadece fiyata karar vermektedirler. Kadınlarda kullanım sıklığına "pek tüketmiyorum" veya "nadiren" cevabını verenlerde fiyat primi 6.96 TL iken, kullanım sıklığı arttıkça fiyat primi de artmakta ve 8.04 TL'ye yükselmektedir. "Her zaman" organik gıda tüketenlerde ise fiyat primi 9.12 TL olmaktadır. Erkeklerde ise sırasıyla 6.92 TL, 8.00 TL ve 9.08 TL'dir. Bu örneklemde de emekli grubunda olmak fiyatı pozitif olarak etkilemektedir. Buradan yaşlı insanların sağlık hakkındaki endişeleri nedeniyle kendilerine daha iyi baktıkları sonucu çıkarılabilmektedir.

Türkiye'deki çalışmalarla karşılaştırıldığında sonuçlar bazı çalışmaların sonuçlarıyla uyum göstermektedir. Örneğin, belirtilen çalışmalardan hiçbiri cinsiyet ile fiyat primi arasında anlamlı bir ilişki bulamazken, Armağan ve Özdoğan (2005) ile Göktolga ve Esengün (2009) bu ilişkinin anlamsız fakat pozitif olduğunu söylemektedirler. Ayrıca Akgüngör vd. (2007) ile Gündüz ve Bayramoğlu (2011), bizim de tavuk örnekleminde bulduğumuz gibi gelir ile fiyat primi arasında olumlu ve anlamlı bir ilişki bulmuşlardır. Eğitim seviyesi ile fiyat primi arasında da Akgüngör vd. (2007)'nin çalışmasına benzer bir şekilde olumsuz bir ilişkiye rastlanmıştır. Son olarak da Ergin ve Özsaçmacı (2010) bizim çalışmamızda olduğu gibi, önceki organik gıda tüketimlerinin ödenen fiyat primini olumlu etkilediği sonucuna ulaşmıştır.

Parasal olarak değerler organik tavuk için kilogram başına 26 TL, organik süt için litre başına 7.7 TL olarak bulunmuştur. Konvansiyonel yöntemlerle üretilen tavuğun kilosunun 7 TL, sütün litresinin ise 2 TL olduğunu göz önüne alırsak, fiyat primleri tavuk için %271, süt için %285'tir. Literatürde incelemiş olduğumuz araştırmalara bakıldığında en yüksek fiyat priminin %202 olduğu görülmektedir. Bu çalışmada bulunan fiyat primleri de bu yüzden abartılı olarak görülebilir; fakat Kuşadası'nda yaşayan halkın tüketim ve beslenme alışkanlıkları düşünüldüğünde bu primler daha normal olarak karşılanmalıdır. Ayrıca, marketlerde bulunan organik tavuk ve süt fiyatları da incelendiğinde bu fiyatların organik tavuk için 37 TL'ye kadar, organik süt için 10 TL'ye kadar çıktığı görülmektedir.

6. Sonuç

Sonuç olarak bu çalışma Kuşadası'ndaki tüketicilerin organik tavuk ve süt tüketimi için ödemek istedikleri fiyat primini bulmak, tüketicilerin bu kararlarını etkileyen faktörleri ve motivasyonları incelemek üzere yapılmıştır. Data, 720 kişi ile yapılan birebir anketler sonucu oluşturulmuştur.

Ekometrik analizlerin de gösterdiği üzere, yaşça büyük kadınlar ve hanehalkı nüfusu az olan aileler organik gıda tüketimi için daha fazla ödemeye razıdırlar. Ayrıca, ailede çocuğun varlığı, gelir, eğitim, gıda ve gıda güvenliği hakkında bilgi, önceki organik gıda tüketimi gibi değişkenler de fiyat primi üzerinde etkili olmaktadırlar.

APPENDIX II

TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ■

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı : Ayhan
Adı : Rengin Meryem
Bölümü : İktisat

TEZİN ADI (İngilizce) : Consumer Willingness to Pay for Organic Chicken and Milk in Kuşadası, Turkey

TEZİN TÜRÜ : Yüksek Lisans ■ Doktora ☐

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. ■
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
3. Tezimden bir (1) yıl süreyle fotokopi alınamaz. ☐

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: