

**CONSUMERS' BEHAVIORS IN  
ORGANIC PRODUCT MARKET  
AN EMPIRICAL APPLICATION**

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**IŐIK UNIVERSITY  
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## **ABSTRACT**

Interest in consuming organic products had remarkably increased since mid80's. Numerous researches and studies have been conducted on the reasons of consumers who prefer organically produced foods rather than conventionally produced ones. Conducted studies revealed that although the demand is increasing each year, organic agriculture occupies only a small percentage of global agriculture. This is surprising as organic agriculture does not only protect human health but also helps in preserving and conserving environment of our planet and ensures sustainability. The demand for organic products in our country is very low. While organically produced food industry is a profit promising branch of the economy, it is also a source of wellness for humans, animals and environment. Therefore, the reasons of consumers for not buying organically produced food must be studied carefully to raise the awareness on the benefits of these products as well as their effects on human health, animal welfare and environment. This thesis is focusing on why consumers are not willing to purchase organic foods? What is preventing them to purchase? Why are they still going for conventionally produced products in this era of scientific developments proving that conventional agriculture is harming human body and environment and also animals? Can modifications in the market or in the marketing of organically produced foods convince them to purchase? What can those modifications be? Can they be realized? This thesis will aim to find out answers to these questions.

Key words: organically produced foods, human health, consumers' behaviors, conventional agriculture, organic agriculture.

# **ORGANİK ÜRÜN PAZARINDA TÜKETİCİ DAVRANIŞLARI DENEYSEL BİR UYGULAMA**

## **ÖZET**

Organik ürün tüketimine duyulan ilgi 80'lerden beri oldukça artmıştır. Geleneksel yöntemlerle üretilmiş ürünler yerine organik yöntemlerle üretilmiş ürünleri tercih eden tüketicilerin gerekçeleri hakkında çok sayıda araştırma ve çalışma yürütülmüştür. Yürütülen çalışmalar ortaya çıkartmıştır ki, her ne kadar talep her yıl artmaktaysa da, organik tarım dünya tarımının sadece küçük bir yüzdesini oluşturmaktadır. Organik tarım sadece insan sağlığını değil, aynı zamanda gezegenimizin doğal çevresini korumaya yardımcı olduğundan ve sürdürülebilirliği de temin ettiğinden, bu şaşırtıcı bir sonuçtur. Ülkemizde organik ürünlere olan talep oldukça düşüktür. Organik yöntemlerle üretilmiş ürün sanayii ekonominin kazanç vaadeden bir dalını oluşturmaktayken, aynı zamanda insan, hayvan ve çevre sağlığı için de önemlidir. Bu nedenle, bu ürünlerin faydaları ve aynı zamanda insan, hayvan ve çevre sağlığı üzerindeki etkileri hakkındaki farkındalığı arttırmak amacıyla tüketicilerin organik yöntemlerle üretilmiş gıdaları almama nedenleri üzerinde dikkatli şekilde çalışılmalıdır. Bu tez tüketicilerin neden organik ürün satın almaya istekli olmadıkları üstünde durmaktadır. Satın almalarını engelleyen nedir? Geleneksel tarımın insan bedenine ve çevreye ve hayvanlara zarar verdiğini kanıtlayan bilimsel gelişmelerin yaşandığı bu çağda neden halen geleneksel yöntemlerle üretilmiş ürünleri almaktadırlar? Organik ürün pazarında veya pazarlanmasında yapılacak değişiklikler onları satın almaya ikna edebilir mi? Bu değişiklikler nasıl olabilir? Gerçekleştirilebilirler mi? Tez işte bu sorulara cevap bulmaya çalışacaktır.

Anahtar sözcükler: organik yöntemlerle üretilmiş gıdalar, insan sağlığı, tüketici davranışları, geleneksel tarım, organik tarım.

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## **ABBREVIATIONS**

**CA** - Conventional Agriculture

**CPF** - Conventionally Produced Food

**DDT** - Dichloro-diphenyl-trichloroethane

**EEC** - European Economic Community

**FSA** - Food Standards Agency

**GMO** – Genetically Modified Organism

**HA** - Hectare

**IFOAM** – International Federation of Organic Agriculture Movements

**K** - Potassium

**MoAF** – Ministry of Agriculture and Forestry of the Republic of Turkey

**N** - Nitrogen

**NA**- Natural Agriculture

**NOSB** - National Organic Standards Board

**NPF** - Naturally Produced Food

**OA** – Organic Agriculture

**OF** - Organic Farming

**OP** – Organic Product

**OPF** – Organically Produced Food

**P** - Phosphor

**TL** - Turkish Lira

**UK** – United Kingdom

**USA** – United States of America

**USD** - United States Dollar

**USDA** –United States Department of Agriculture

## **CHAPTER ONE**

### **1. INTRODUCTION**

Without any doubt consumers' interest on safety of the food they are consuming has been increasing since mid80s. Being far from a trend or a nine-day wonder, interest on organically produced foods (OPFs) is proved to be the result of consumers' developed consciousness and awareness on health and environment concerns as well as the welfare of animals and the sustainability of the world they are going to legate to their children and grandchildren (Mintu-Wimsatt et al., 1995).

Based on the studies and researches that are conducted, since more than three decades now, we can divide consumers' OPF buying reasons into two sections; sensory reasons and non-sensory reasons. Sensory reasons are to be cited as the most significant and important reasons for consumers to prefer purchasing OPF. The taste, the smell and the aroma of the food satisfying and pleasing the consumers are all considered among sensory reasons. Finding their childhood tastes which they were yearning for is another sensory reason (Magnusson et al. (2001) for Sweden; Roddy et al. (1996) for Ireland; Schifferstein, H.N.J., Ophuis, O. (1998) for Netherlands; Torjusen et al. (2001) for Norway; Hill and Lynchehaun (2002) for UK). Non-sensory reasons can be classified as consuming healthy food by avoiding chemicals and additives contained in conventionally produced food (CPF), supporting local economy, concerns about animal welfare and preserving environment, wanting to be sure of the food's nutritional value and of the production methods (Ott et al., 1990; Jolly, 1991; Hill and Lynchehaun, 2002; Zanolli and Naspetti, 2002; Chinnici et al., 2002; Hutchins and Greenhalgh, 1997; Hughner et al. 2007).

Compared to numerous researches conducted to determine why consumers prefer OPF, there are remarkably less researches and studies performed on the reasons and/or motives which are preventing consumers to purchase OPF. Aforesaid studies on “why not purchasing” have pointed out high price of OPFs in the market as the primary reason of not buying. Considerably high prices of OPFs which are 25-60% higher in foreign countries, while it is 150-200% higher in Turkey (Bayram et al., 2007) compared to the ones produced by conventional methods, prevent consumers to prefer buying OPFs and oblige them to go for CPFs (Tregear et al. (1994), Magnusson et al., (2001), Buder, F., Feldmann C., Hamm, U. (2014) for Germany,; Millock, K. and Hansen, L.G. (2002) for Denmark, Aertsens et al. (2011) for Belgium). Lack of availability is indicated by some researchers as another important reason preventing consumers to buy OPFs regularly. Not being able to find OPFs easily, in the reach of their hands, pushes the consumer to buy CPFs (Zanoli and Naspetti (2002) for Italy). Studies conducted by Ott (1990) in the USA, by Canavari et al. (2002) in Italy and Aertsens et al. (2011) in Belgium pointed out that lack of trust in organic origin of the foods is another significant deterrent. Consumers do not trust in the control and certification systems and they are therefore, reluctant in buying OPFs, believing that they can be cheated very easily. Insufficient presentation, lack of knowledge in other words, is another reason for consumers to not buy OPFs as pointed out by the studies of Roddy et al. (1996) conducted for Ireland and Padel (2005) for UK and of Chrysochoidis (2012) for Greece. Another weak but efficient reason refraining consumers from purchasing OPFs is “cosmetic concerns” which are described as the concern raised in consumers due to the appearance of OPF which has blemishes, the existence of worms inside, the imperfection in their shapes as showed by the studies conducted by Thompson and Kindwell (1998) and by Ott (1990) in the USA.

Taking into consideration the minority of the researches conducted on the deterrents and the importance of OPF industry as a new resource for the economy which intends to grow by folds each year, this thesis will be focusing also on the “obstructing” reasons and/or motives that prevent consumers to buy OPFs. Determining the reasons why consumers are not purchasing OPFs can provide some solutions in eliminating those reasons, changing consumers’ attitudes and behaviors and their implementations can convince consumers to start to purchase / or purchase more often OPFs as a consequence. On the other hand, these results can put light

onto OPFs agriculturists on modifying, amending or restructuring their marketing behaviors as well and help the industry thereby to grow further.

In trying to provide a backup for OPF industry, this thesis will explain first the differences between organic and natural food as most of the time both are interchangeably used instead of each other, causing a misunderstanding as they are not the same and affecting consumers perception and purchasing decisions. Another point of explanation is to be provided concerning CPF which is also called as food with genetically modified organism (GMO) and sometimes as Frankenfood.

The thesis then shall focus, by the questionnaire, on the expectations of consumers who maybe not prefer to purchase CPFs but cannot buy OPFs for some specific reasons.

The questions to be asked to the consumers to determine why they are not purchasing OPFs will have the aim to specify their perception and behaviors on the subject and to figure out what can make them start to purchase OPFs or increase their actually existing but quite limited purchase rates.

## **CHAPTER TWO**

### **2. ORGANICALLY PRODUCED FOOD / NATURALLY PRODUCED FOOD/ CONVENTIONALLY PRODUCED FOOD / SUSTAINABILITY**

Below explanations are provided to provide the characteristics of different types of agriculture.

#### **2.1. Specifications**

**Organically Produced Food (OPF)** is the food product obtained by the processes of organic agriculture (OA) which can be described as a system with the aim of obtaining optimum yield by optimal use of natural resources and energy and which in the meantime, is aiming to preserve the balance of the nature and maintaining sustainability of soil productivity, and the durability of living creatures of the nature by controlling diseases and biological hazards (Bayram et al., 2007).

National Organic Standards Board (NOSB) of the United States Department of Agriculture (USDA), specifies that Organic Agriculture is “*An ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony*”. D. Treadwell et al. (2016) define organic farming as a composition of management strategies, precisely proactive and ecological, aiming to prevent soil erosion and enhancing biological diversity by maintaining soil fertility and meanwhile

minimizing risks jeopardizing human and animal health and protecting natural resources.

Çavdar (2003) précises that the primary aim of organic agriculture can be depicted as to restructure natural balance within ecological system which is destructed due to wrong applications. The process is controlled and certified in all phases from soil to the table. Synthetic products are not involved in any phase of the process.

Website of the Ministry of Agriculture and Forestry of the Republic of Turkey (MoAF) defines Organic Farming as *“organic farming is a controlled and certified way of agricultural production, which does not harm human health and environment and which does not include the use of chemicals. Organic farming aims to protect the life-sustaining resources and natural life by maintaining the natural balance”*.

These last two definitions give us the most important point of “organic food”. USDA defined OA in 1980 as *“organic agriculture is a production system which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators and livestock feed additives. To the maximum extent feasible, organic farming systems rely on crop rotations, crop residues, animal manures, legumes, green manures, off-farm organic wastes and aspects of biological pest control to maintain soil productivity and tilth, to supply plant nutrients and to control insects, weeds and other pests”*.

As an addition to all the above definitions Lampkin (1990, 2003, 2009) added the sustainability attribute of OA. He stated that organic farming (OF) is an agricultural approach emphasizing the protection of the environment, welfare of animals, quality of the food, food health, sustainability of the resources. Lampkin and Dabbert (2003) also stated that OF has social justice objectives.

To be compatible with all the above definitions OPF production, which is the product of OF, is controlled and certified during all steps of the production process, starting from the soil and ending on the shelf, including seed, fight with diseases and pests, harvesting, packaging and transporting, to ensure that no chemicals/synthetics got involved in this very specific food. This means no hormones, no fertilizers, no pesticides, no antibiotics are used or got in touch with the food itself. The outcome is pure, free of any inorganic components. OF products are certified by competent and accredited organizations and these organizations are strictly controlled as well.



Principles of OF allow use of certain minerals as well as plant and animal originated substances during the production processes to fight with pests, fungi, mice, ticks, bacteria, etc. Use of these substances is subject to a control to be performed by a certification organization. Some of these minerals and substances are provided here below:

Table 2.1 Some of the substances which can be used in organic farming  
Source: (Kurtar, E.S., 2004).

<b>Substances Which Can Be Used in Organic Farming</b>	
<b>Material</b>	<b>Definition and Use</b>
Lecithin	Fungicide
Copper in form of hydroxide, copper oxychloride, copper sulphate (tribasic), cuprous oxide	Fungicide 6 kg/ha/year since January 1, 2006. Must be controlled by control and/or certification institute.
Calcium polysulphide	Fungicide, insecticide, acaricide For fruit trees, olive trees and grapes only for winter applications Must be controlled by control and/or certification institute
Mineral fats	Fungicide, insecticide Only for subtropical plants such as fruit trees, grapes, olive trees and banana Must be controlled by control and/or certification institute
Sulphur	Fungicide, acaricide, repellent
Potassium permanganate	Fungicide, bactericide Only for fruit trees, grapes and olive trees
Pyrethrins extracted from <i>Chrysanthemum cinerariaefolium</i>	Insecticide
Pyrethroids (only deltamethrin or lambda cyhalothrin)	Insecticide For traps and diffusers. Only against <i>Bactrocera aleale</i> and <i>Ceratitis capitata</i> Must be controlled by control and/or certification institute
Potassium salts of fatty acids	Insecticide Must be controlled by control and/or certification institute
Solution of the Extract of <i>Nicotiana tabacum</i>	Insecticide Only for aphids on subtropical fruit trees such as orange and citron and tropical trees such as banana Must be controlled by control and/or certification institute
Azadirachtin extracted from <i>Azadirachta indica</i>	Insecticide Only for seed production from mother plant and for the production of other vegetative production materials and for decoration plants
Paraffin fats	Insecticide and acaricide
Retonone extracted from Derris spp., Lonchocarpus spp. And Terphrosia spp.	Insecticide Must be controlled by control and/or certification institute
Vegetable oils such as peppermint oil, pine oil, cymene	Insecticide, acaricide, fungicide, shoot preventive inhibitor

**Naturally Produced Food (NPF)** is the food which is cultivated without using any hormones and synthetic or chemical additives during the agricultural process and which is minimally processed. The seeds they are produced from are non-GMO (not genetically modified organism) as in OA. These seeds are mostly regional and sometimes travel country wide by seed exchanging movements between agriculturists. The most important difference from OPF is that NPF doesn't require certification during any steps of the production process. Another difference is that any use of pesticides or synthetic fertilizers by neighboring farms using conventional methods, will not affect the natural aspect of the food cultivated in a natural food farm, unless the latter uses those artificial aids too. Shortly, if someone plants non-GMO seeds in the backyard of his/her house, in his/her small scaled field or even on a large land, uses no synthetics during the growth till the harvest, the outcome is deemed to be a natural food, although his/her neighbors use pesticides few meters away or adds synthetic fertilizers to their own soil.

In a point of view, agriculture of naturally produced food is easier and cheaper than OPF as control during the production process and certification in the end of the production is not needed and as its natural aspect is not affected as easily as in OA.

**Conventionally Produced Food (CPF)** is the food which is obtained by conventional methods which allow the use of synthetic additives, pesticides, hormones and most importantly seeds of genetically modified organisms (GMO), as it is aimed to obtain the utmost yield from the soil. The way arable fields are treated for years with synthetic materials increased the yield of the products for sure but on the other hand endangered the sustainability and natural balance of the environment.

To emphasize its unnatural content, some uses the term "Frankenfood", which is coined for the first time by a professor of English in Boston College in a paper he wrote to The New York Times on June 16, 1992. He created this term as a pejorative word to refer to Mary Shelley's famous novel Frankenstein published in 1818. The novel depicts a young scientist, creating a sapient creature as an outcome of a totally unorthodox scientific experiment. By this term Lewis wanted to put emphasis on how genetically engineered plants or animals from which we do derive food are and will be dangerous for humankind as well as animal species and the environment eventually. The term covers all food that is cultivated from GMO or non-GMO seeds, using synthetics as fertilizers to increase the yield and pesticides to get rid of

pests during its growth. For the first aim of conventional agriculture, given the continuously increasing population of the world, is to obtain the maximum yield from unit of area. Therefore, researchers who worked to increase the yield have mostly neglected the welfare of the environment and animal kinds.

Ikerd (1993) defined conventional agriculture as a system which is treating farms like factories having inputs and outputs, where fields and animals are considered as production units. The pesticides, antibiotics and hormones used during the growth of crops or animals in this type of agriculture to increase yield and hence meet the constantly increasing food need of our century, are proved to be dangerous for human and animal health as well as the environment. Yet, there is a huge percentage of consumers who prefer conventional or Frankenfood to natural or organic ones.

**Sustainability:** Sustainability, as a word, means the ability to exist constantly, being sustainable. The word sustainable is derived from “sustinere” in Latin, which means to keep and be kept in existence, implying permanence and long-term support. So by using the work sustainability in agricultural domain, we mean protecting and conserving life supporting systems of our planet; the nature, the environment.

Ikerd (1990) stated that sustainable agriculture must be capable of maintaining its productivity and usefulness to society indefinitely. He published an article titled “The Need for a Systems Approach to Sustainable Agriculture” in 1993 and emphasized that any system which doesn’t succeed in conserving and protecting its own resources is condemned to lose its productivity gradually and that consequently shall lose its ability to produce. And eventual consequence of such systems shall be causing harm as they shall be of no use for the society, thus shall become socially unsustainable. He also added that farming systems are not providing consumers with properly produced safe and healthy food in exchange of an affordable price and by providing this, not enhancing the consumers’ life quality are politically unsustainable.

On the other hand, Youngberg and Harwood (1989) had stated in their article titled “Sustainable Farming Systems: Needs and Opportunities” that due to the complexity of agricultural production and natural environment interrelations makes it impossible for us to decide which methods and systems in different locations will lead to sustainability.

Development of sustainability is based on the environmental social and economic achievements. Economic achievements will lead to profit increase, social achievement will develop people and environmental achievement will preserve the nature.

Meulenberg (2003), states that social responsibility of the consumers and their needs are taken into account during decision-making process when it comes to sustainable consumption. Reheul et al., (2001) pointed out that generally behaviors of 30% of consumers are positive concerning sustainable consumption.

Although consumers are willing to support the sustainability for reasons of human health, preserved environment, supported local economy and well cared animals, their limited budgets are not enabling them to support it by purchasing OPFs as their prices are relatively high (Gruner and Juhl, 1995).

## 2.2. Differences

The differences between three types of agriculture can be briefed as presented by below table:

Table 2.2 Main differences between organic, natural and conventional farming

<b>Main Difference Between Organic, Natural, Conventional Farming</b>			
	<b>Organic Farming</b>	<b>Natural Farming</b>	<b>Conventional Farming</b>
<b>Soil</b>	Must be free of any inorganic components since at least five years	No need to be inorganic free at the time of planting	No need to be inorganic free at the time of planting
<b>Seeds</b>	Non GMO	Non GMO	Can be GMO or non GMO
<b>Use of synthetic fertilizers</b>	Not allowed	Not allowed	Allowed
<b>Use of synthetic pesticides</b>	Not allowed	Not allowed	Allowed
<b>Use of antibiotics during animal breeding</b>	Not allowed	Not allowed	Allowed
<b>Certification</b>	Must be controlled and certified	Not needed	Not needed

As seen here above, the most important difference between organic agriculture (OA), natural agriculture (NA) and conventional agriculture (CA) is for sure the existence of synthetic fertilizers, additives and pesticides in the process of CA. However, it is determined that manure which is very frequently used in OA and NA can also constitute high risk as its excessive use pollutes underground water and the environment.

The seeds in OF and NF are non-GMO and are either reserved from the previous harvest or exchanged with other organic or natural farmers. But the seeds used in conventional farming are with GMO in order to increase the yield per unit planted area and fight against certain herbal diseases.

### **2.3. Effects of Organically Produced Foods on Health**

Although the most important reason for consumers in purchasing organic foods seems to be health concerns, studies conducted on the matter were unable to determine a significant relation between health and OPF consumption (Akçay et al., 2004; Briviba et al., 2007; Caris-Veyrat et al., 2004; Stracke et al., 2009; Dani et al., 2007). However some studies proved that following constant consumption of OPFs increases certain agents in the metabolism, preserving it against conditions such as cancer, coronary diseases, arthritis, diabetes, bladder infections, etc. Grønder-Pedersen et al. (2003) conducted a study on 16 men and women. They indicated that their double-blind randomized crossover study resulted proving higher urinary excretions of kaempferol and quercetin which are strong agents when it comes to the treatment of coronary conditions and cancer, following consumption of OPFs. On the other hand, Kummeling et al. (2008), besides stating that their study conducted on 2764 toddlers who are between 0 and 2 years old, proved no significant relation between consumption of OPFs and being healthy, stated that constant consumption of organic dairy products is significantly associated with a lower risk of eczema. Study of Rist et al. (2007), conducted on 312 breast feeding women, concluded with the outcome that breast feeding women who have followed a strict OPFs diet have significantly higher levels of rumenic acid (also known as bovinic acid, it is the only substance which occurs naturally and which prevents cancer unequivocally) in their breast milk. Dani et al. (2009) conducted a trial with organic and conventional juices and concluded with the results that consumption of organic juices reduces lipid

peroxidation in most of the brain structures. Lipid peroxidation is a process resulting with cell damage. Experiment of Olsson et al. (2006), conducted on human colon and breast carcinoma cells, resulted showing that combined organic extracts significantly inhibited cancer-cell proliferation.

## **CHAPTER THREE**

### **3. ORGANIC AGRICULTURE IN THE WORLD AND IN TURKEY**

The development of organic agriculture can be studied in two different sections with regard to its development in the world and in Turkey.

#### **3.1. Organic Agriculture in the World**

First movements on organic agriculture appeared in world scene around 30's and 40's as a consequence of searching alternatives against excessive use of synthetic nitrogen in agriculture. Use of synthetic nitrogen had debuted after the end of the World War I. The facilities which have been established to produce explosives by processing Nitrogen based on Haber-Bosch technique, had been converted into facilities which were producing Nitrogen fertilizers (Lotter, D.W. 2003). Using nitrogen based fertilizers were about 20-fold reduced in volumes and weights of fertilizers than manure based ones. But why synthetic nitrogen was so excessively used in agriculture? This is due to Justus Freiherr Von Liebig, who is also known as the "father of the agricultural chemistry". He had indicated in his very well-known book titled "Chemistry in Its Application to Vegetable Physiology and Agriculture" published in 1840, that the production of digestible Nitrogen is the primary purpose of agriculture. According to Von Liebig Nitrogen (N), Phosphor (P) and Potassium (K) (also referred as to "NPK mentality") are at the top of the list depicting the elements which are necessary for the growth of plants. Those three elements were

widely used to increase the fertility of agricultural lands till 1980's (Porceddu and Rabbinge 1997).

Without any doubt OA owes its existence and development to English botanist Sir Albert Howard. Born in 1873 in England, Sir Howard was educated at Wrekin College, Royal College of Science in South Kensington. During the early years of his career which he spent as the Director of Agricultural Centers in India between 1905 and 1931, he observed closely the Indian farmers and learnt about their farming and composting methods. When he returned to England, he focused on recycling waste materials and developed composting system which he named as Indore System based on the farming systems of the Indore region in India. He gathered his observations and studies in several books which are valued as the fundamentals of Organic Farming. In his book "An Agricultural Testament", published in 1943, Sir Howard emphasized the importance of using all available waste materials, including even sewage sludge. He stated that by this method fertility and of the soil can be protected and maintained. His "Law of Return" was underlining a recipe for good and proper composting and was detailing the mixture of plant and animal residues together with urine-soaked soil and ash, all piled in a certain size, under a certain temperature, humidity and aeration. Although seemed surprising for the time it was first indicated, Sir Howard was not the only person who was thinking in the same way. Even one of the most respected writers of the world, Victor Hugo was describing in his masterpiece, "Les Misérables" (published in 1862), "*No Chinese peasant ... goes to town without bringing back, at either end of his bamboo pole, two buckets filled with unmentionable matter; and it is thanks to this human manure that the Chinese earth is as fruitful as in the ways of Abraham*".

Sir Howard always pointed out that there is always a vivid connection between the soil health and plants, animals and humankind. If the soil is healthy, the crops are healthy and so are the animals and humans. In his book "Farming and Gardening for Health or Disease", published in 1945, (published later under the title of Soil and Health), he described an observation he made to prove that Organic Farming will ensure a healthy soil and accordingly healthy plants, animals and humans. He wrote that animals that are fed by crops cultivated in soil rich in humus were rubbing their noses to sick animals but were not becoming sick.

Sir Howard was criticizing Von Liebig's NPK mentality stating that he was focused only on soil chemistry and was neglecting its biology and physics. Refusing



use of chemicals in farming he started his book “The War in the Soil” (published in 1946) by writing “*The war in the soil is the result of a conflict between the birthright of humanity – fresh food from fertile soil – and the profits of a section of Big Business in the shape of the manufacturers of artificial fertilizers and their satellite companies who produce poison sprays to protect crops from pests and who prepare the various remedies for the diseases of livestock and mankind*”.

According to Sir Howard, comparing non-organic and organic farming properly would be a tough process. His point was that to perform such a comparison first, one needed to have same size of land, located side by side. These two lands should be worn by chemicals in the same way and for the same period. Plus, one of these lands would be passed at least five years of transition to become an organic land, without use of any synthetics. And finally a period of at least ten years would be necessary to compare the outcomes. This is where and when Lady Eve Balfour came onto the scene.

Lady Eve Barbara Balfour (1898 – 1990) was born to one of England’s politically well-known families. Educated at Reading University College, she decided that she wants to become a farmer and lived her entire life to work as a pioneer in organic farming. Founding England’s “The Soil Association”, which is a leading organization in organically produced food and agriculture, she contributed hugely on organic agriculture. Starting Under severe conditions of World War II, Lady Balfour performed between 1939 and 1969, on her own lands in Suffolk. Gathering the findings of her experimental farming in her book “The Living Soil and the Haughley Experiment”, she made huge contributions to the compost-based farming.

The term of “Organic farming” is coined for the first time by Lord Northbourne (1896-1982) in 1940, in his book “Look to the Land”. Northbourne’s book is considered as having initiated worldwide movements in organic agriculture and is therefore deemed to be the manifesto of organic agriculture.

By the foundation of The International Federation of Organic Agriculture Movements (IFOAM) in 1972 in Germany, OA started to have its definite principals and aims, such as to; gather all organic/ecologic agriculture movements under the same roof globally, to process the development of the movement in a proper way, to prepare necessary standards and regulations on organic/ecologic agriculture, to

inform all its members and agriculturists about developments; defines the main principles and aims of OPF production and processing are follows as revised in 1998:

Table 3.1 IFOAM's Main principles

<b>IFOAM's MAIN PRINCIPLES</b>
Producing high quality food in sufficient quantity and for everybody.
Taking into account the ecological and social impact of the organically produced food production and processing systems in a wider concept.
Maintaining and increasing soil fertility in long term.
Interacting in a constructive and life-enhancing way with natural systems and cycles.
Promoting appropriate way of treating and using water, water resources and all aquatic life.
Developing a valuable and sustainable aquatic ecosystem.
Minimizing all kinds of pollution.
Encouraging and enhancing biological cycles within farming systems, involving micro-organisms, soil flora and fauna, plants and animals.
Maintaining the genetic diversity of the production system and its surroundings, including the protection of plant and wildlife habitats.
Using renewable resources, as far as possible, in production systems, that are organized locally.
Creating a harmonious balance between crop production and animal husbandry.
Giving all livestock conditions of life with due consideration for the basic aspects of their innate behavior.
Processing organic products using renewable resources.
Producing organic products that are hundred per cent biodegradable.
Producing textiles which are long-lasting and of good quality
Allowing everyone involved in organic production and processing a quality of life which meets their basic needs and slows an adequate return and satisfaction from their work, including a safe working environment.
Progressing towards and entire production, processing and distribution chain which is both socially just and ecologically responsible.

Due to the efforts of institutions such as IFOAM and non-governmental organizations, countries all over the world prohibited the use of pesticides of dichloro-diphenyl-trichloroethane (DDT) class starting from 1979. DDT, is the commonly used and known name for the first synthetically created pesticide in 1940s. United States was the first country to prohibit DDT class pesticides. Organic farming then, started to become a new production sector and had a commercial value starting from 1980's as consumers demands increased. Thus it became more organized than only a family farm sized business.

Although OA and OPFs are considered as environmental friendly and ensuring sustainability of the environment, Pretty (1995) asserts that OA may have negative consequences on the nature. He explains these negative consequences that are affecting the environment due to ammonium which volatilizes from wastes of livestock, fields under legumes causing nitrate leaching. He also pointed out that application of copper sulphate (an inorganic substance) which is also known as Bordeaux mixture, used to fight with ravages of plant diseases causes heavy metals to accumulate in the soil.

Ecovia, which is a market research company, states that as per the year 2017, OPFs' global market reached 97 billion USD. The leaders of this market are the USA with 44 billion USD, Germany with 11 billion USD, France with 8.70 USD and China with 8.36 billion USD. As per Ecovia's data the country which spent most on organic food is Switzerland with 317 USD per capita, while the highest organic market share is in Denmark with a percentage of 13.3.

IFOAM declared that in 2017, there were 2.9 million organic producers all over the world. This figure is 5% higher than the figure reported in 2016. The leading countries as per number of producers are India with 835,000 producers, Uganda with 210,352 producers and Mexico with 210,000 producers.

As per 2017, 69.8 million hectares were used for OF. This figure exceeds the figures of the year 2016 by 20%. Leading countries as per largest OF areas are Australia with 35.6 million hectares, Argentina with 3.4 million hectares and China with 3 million hectares. When the case is studied as per continents or regions Oceania is the leading region with 35.9 million hectares, followed by Europe with 14.6 million hectares and Latin America with 8 million hectares.

On farmland basis 1.4 percent of global farmlands are used for OF. In fourteen countries the land used for OF exceeds 10% of the total arable lands. When OF lands are compared with the total arable lands of the countries, Liechtenstein is the first country having 37.9% of its farmlands used for OF. Samoa is the second country with 37.6%, followed by Austria with 24%.

OF and OPFs are gaining more importance as the awareness and consciousness of consumers on human and animal health, preservation of environment and sustainability of our planet increase each day.

### 3.2. Organic Agriculture in Turkey

First steps in OA field in Turkey have been made due to the European importing countries' demands on the subject in mid 80s. Aegean region was the first region to start organic agriculture following the demands received from European importers especially for dried raisins and figs (Atakay, 2017).

As there was no legislation in force in the early days of this process, Turkey was following and respecting the legislations of importing countries based on the Council Regulation EEC (European Economic Community) No.2092/91 of June 24, 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuff. Then Commission Regulation EEC No.94/92 of January 14, 1992 laid down detailed rules for implementing the arrangements for imports from third countries. It requested that countries implement their own regulations in force and they apply to EC preparing a file including several technical and administrative matters as well as the regulation in subject (Demirci et al., 2002). Thus Ministry of Agriculture and Rural Affairs of the Republic of Turkey, initiated the studies to prepare a national regulation, based on the EEC 2092/91, together with various establishments and institutions. First regulation of our country on organic agriculture came into force following its publication on official Gazette with number 22147 on the date of December 24, 1994. The first regulation titled "Regulation on Ecological Methods for Production of Plant and Animal Products" has been amended by the Regulation published on the Official Gazette with number 22328, dated June 29, 1995. Since then the OA activities in Turkey are performed under the control of the Ministry of Agriculture and Rural Affairs based on aforesaid Regulation. A summary of the history of OF in Turkey is presented at Appendix- A.

The first records on OA date back to 1992 when the first data have been registered. Based on the data and statistics of the Aegean Exporters Association and MoAF, it is seen that in 1992 only 1,780 agriculturists were producing 32 different kinds of OPFs. In 2001 the figures have increased to 13,930 agriculturists, producing 92 different OPFs (Demirci et al., 2002). In 2011, 42,460 agriculturists were producing 225 different kinds of OPFs (Merdan, 2013). The final statistics announced by the MoAF stated a total of 54,566 agriculturists.

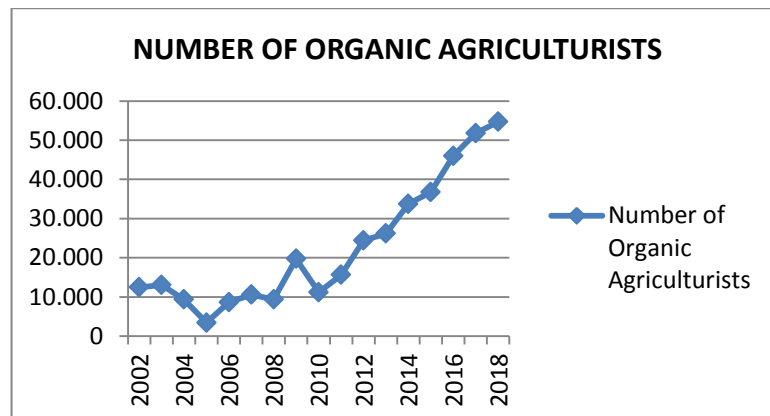


Figure 3.1 Number of agriculturists of Turkey producing organically produced food between the years of 2002 and 2018. Source: Ministry of Agriculture and Forestry

Table 3.2 Number of agriculturists of Turkey producing organically produced food between the years of 2002 and 2018. Source: Ministry of Agriculture and Forestry

<b>DATA ON RECORDED NUMBER OF ORGANIC AGRICULTURISTS BETWEEN 2002-2018</b>	
<b>Years</b>	<b>Number of Agriculturists</b>
2002	12,428
2003	13,044
2004	9,314
2005	9,427
2006	8,654
2007	10,553
2008	9,384
2009	19,706
2010	11,179
2011	15,642
2012	24,406
2013	26,181
2014	33,738
2015	36,732
2016	45,991
2017	51,796
2018	54,666

In 1992 OPFs were planted on a surface of 60,469 da. This surface has increased to 465,218 da in 2001 (Demirci et al., 2002). The statistics announced by the MoAF show that plantation surface of OPFs have increased to 365,889.54 ha in 2018.

The figures on the plantation surface of OPFs in Turkey are presented here below:

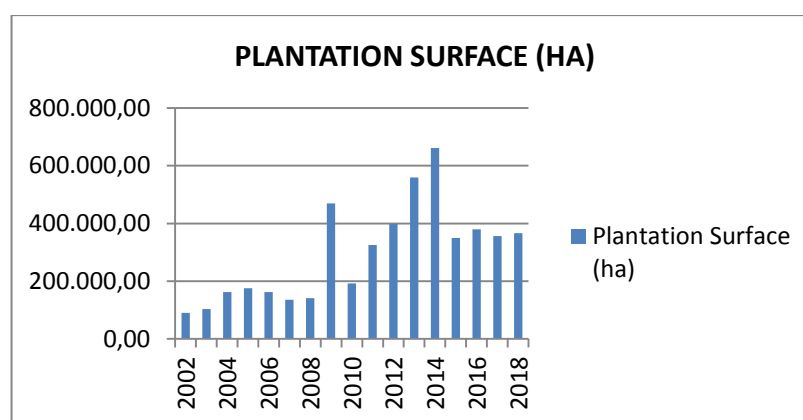


Figure 3.2 Plantation surfaces used in Turkey for organic agriculture between the years of 2002 and 2018. Source: Ministry of Agriculture and Forestry

Table 3.3 Plantation surfaces used in Turkey for organic agriculture between the years of 2002 and 2018. Source: Ministry of Agriculture and Forestry

<b>Organic Agricultural Plantation Surface of Turkey Between 2002-2018</b>	
<b>Years</b>	<b>Plantation Surface (ha)</b>
2002	89,826.69
2003	103,190.25
2004	162,192.74
2005	175,073.59
2006	162,131.49
2007	135,359.75
2008	141,752.30
2009	469,557.92
2010	191,785.44
2011	325,445.08
2012	398,897.14
2013	558,837.63
2014	660,807.40
2015	349,063.00
2016	379,042.00
2017	355,853.00
2018	365,889.54

The statistics show that in 1992 a total of 13,930 tons OPFs were produced. In 2001 harvested OPFs were reaching a total of 156,168 tons (Demirci et al., 2002). In 2011 total harvest of OPFs reached 2,905,755 tons. (Merdan and Kaya. 2013). The final statistics announced by the MoAF on harvested OPFs are detailed here below:

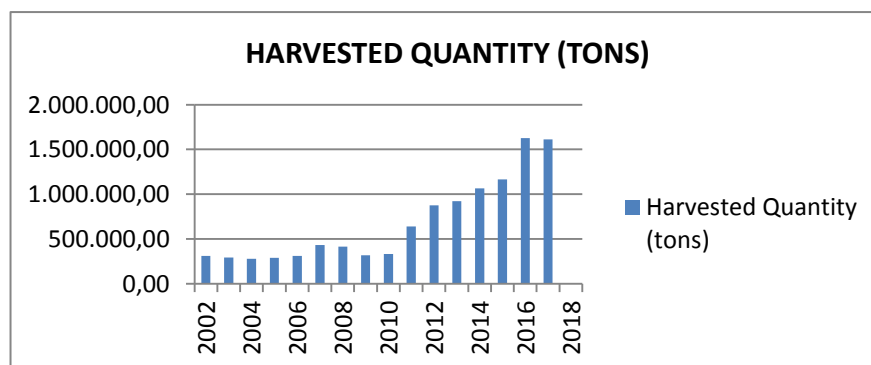


Figure 3.3 Quantity in tons for organic agricultural production harvested in Turkey between the years of 2002 and 2018. Source: Ministry of Agriculture and Forestry

Table 3.4 Quantity in tons for organic agricultural production harvested in Turkey between the years of 2002 and 2018. Source: Ministry of Agriculture and Forestry

<b>Harvested Quantity in Organic Agricultural of Turkey Between 2002-2018</b>	
<b>Years</b>	<b>Harvested Quantity (tons)</b>
2002	310,124.58
2003	291,875.92
2004	278,725.90
2005	289,082.32
2006	309,521.59
2007	431,202.97
2008	415,380.09
2009	318,164.99
2010	331,361.48
2011	639,810.76
2012	876,371.52
2013	922,623.73
2014	1,065,567.32
2015	1,164,202.00
2016	1,627,106.00
2017	1,610,913.04
2018	1,714,769.02

Based on the data of the MoAF value of exported OPFs in USD is detailed as below for the years between 1998 and 2018. Although in some years such as 2007, the amount in ton of the products exported by Turkey decreases, a significant increase is observed in USD value of the exported products. This fact is due to the export of non-food organic products such as textile items, toys, etc. added to the records of the years marked with an (\*).

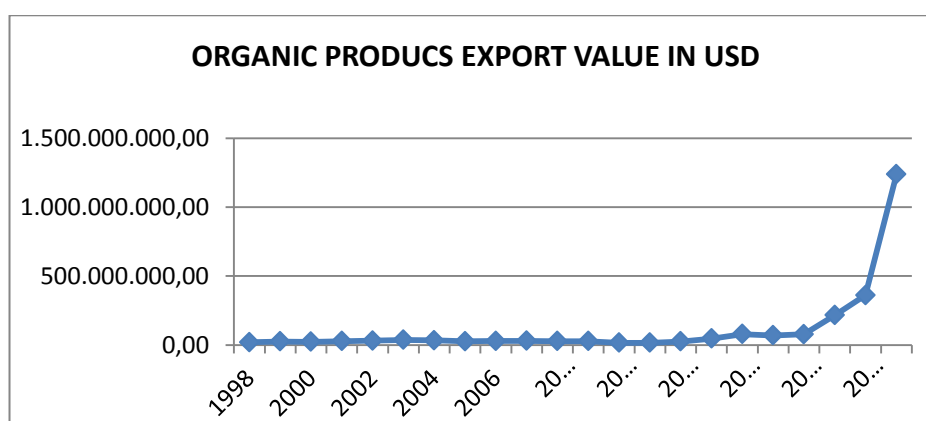


Figure 3.4 Value of OPFs in USD exported by Turkey between the years of 2002 and 2018. Source: Ministry of Agriculture and Forestry

Table 3.5 Value of OPFs in USD exported by Turkey between the years of 2002 and 2018. Source: Ministry of Agriculture and Forestry. (\* is the years when records include non-food products)

<b>Organic Products' Export Values in USD</b>		
<b>Year</b>	<b>USD Value</b>	<b>Ton</b>
1998	19,370,598.69	8,616.68
1999	24,563,892.01	12,049.95
2000	22,756,297.13	13,128.93
2001	27,243,236.92	17,556.86
2002	30,878,786.12	19,182.85
2003	36,932,934.88	21,083.37
2004	33,076,319.57	16,093.19
2005	26,230,259.24	9,319.32
2006	28,236,617.42	10,374.49
2007*	29,359,321.49	9,346.67
2008*	27,260,481.00	8,628.80
2009*	27,504,939.00	7,564.38
2010*	15,877,324.00	3,592.57
2011*	15,529,387.52	3,371.30
2012*	24,703,607.48	6,258.31
2013*	46,020,389.07	10,495.21
2014*	78,779,537.00	15,552.63
2015	69,229,817.00	13,549.00
2016*	77,831,368.00	16,819.00
2017*	215,288,185.80	61,689.30
2018*	361,128.943	111,690.68
<b>TOTAL</b>	<b>1,237,802,242.34</b>	<b>395,963.49</b>

Ministry of Agriculture and Forestry of the Republic of Turkey (MoAF) is the competent authority which regulates the organic production in Turkey. The ministry is the executive, monitoring and controlling authority of the country, always based on the Organic Agriculture Law which is amended in 2010. All organic agriculturists, organically produced food processors, organic certificate accreditation institutions, organic product importers and exporters, non-governmental organizations working in organic domain and other related individuals and establishments are working with the ministry.

The MoAF also gathers the data obtained on organic agriculture and its outcomes. MoAF's data is based on the certification institutions which are providing organic farmers with accreditation certificates on the accuracy of their organic products. There are actually 39 certifications bodies announced on the web site of the



MoAF but only 35 of them have are entitled to give organic product certifications. The site indicates for 4 of them that their accreditation is cancelled. List of the actual certification organizations can be seen on Appendix-B

Review of these institutions shows that these certification bodies are providing control and certification services for different types of organic product origins such as plant, animal, aquaculture or wild collecting. The certificates are also provided for various phases an organic product is going through such as processing, packaging, marketing, transportation, storage and labeling. The substances which are used during producing as fertilizers, soil amending agents and crop protecting agents. Only 2 institutions provide certificates for apiculture, 5 for wild collecting and 5 for aquaculture. 13 of these authorized institutions are located in Aegean region of our country, while 6 are located in Mediterranean region, 4 in Marmara region and remaining 12 in other regions of Turkey except Black Sea region.

MoAF is supporting organic producers economically too. As per 2018, it paid as incentives 143,9 Million TL to 51,669 organic producers, producing on 3,761,290 da of land to support and encourage producers on organic farming including organic animal farming.

Organic farming controller training programs are organized since 2006. By these programs individuals are trained for 9 days and are made subject to an examination on the 10<sup>th</sup> day. The individuals who succeed the examination are entitled by the MoAF to be named as “organic farming controller” and to control on behalf of the control and certifications bodies whether each phase of an organic farming product is in conformity with the relating legislation. As per 2019, 145 persons have attended organic farming controller trainings.

Table 3.6 Organic agriculture details of Turkey for the year 2018

<b>Organic Agriculture Details of Turkey For The Year 2018</b>	
<b>Agriculturists</b>	54,666
<b>Plantation Surface as ha</b>	379,042
<b>Harvested quantity as ton</b>	1,714,769
<b>Export Value as USD</b>	77,831,368

Table 3.7 Most exported organic agriculture products in 2018

<b>Most Exported Organic Agriculture Products in 2018</b>				
<b>Product</b>	<b>Quantity (in ton)</b>	<b>Value (in \$)</b>	<b>Ton %</b>	<b>\$ %</b>
Wheat and wheat products	41,633.90	131,146,772	37	36
Fig and fig products	7,996.93	51,980,044	7	14
Fruit and fruit products	25,964.37	48,293,736	23	13
Hazelnut and Hazelnut products	5,356.76	40,015,020	5	11
Grape and grape products	10,572.35	26,430,886	9	7
Apricot and apricot products	4,773.70	22,627,358	4	6
Lentil and kinds	5,229.36	16,054,144	5	4
Legume and legume products	5,407.06	5,947,769	5	2
Spices	1,027.74	4,470,685	1	1
Olive and olive products	707,71	4,097,634	1	1
Chickpea	1,360.47	2,340,002	1	1
Pistachio	26.76	795,976	0	0
Others	1,618.91	6,928,917	1	2
<b>TOTAL</b>	<b>111,690.68</b>	<b>361,128.943</b>	<b>100</b>	<b>100</b>

OPFs are marketed in Turkey with below organic product labels:



Figure 3.5 Main logo of Turkish Organic Products

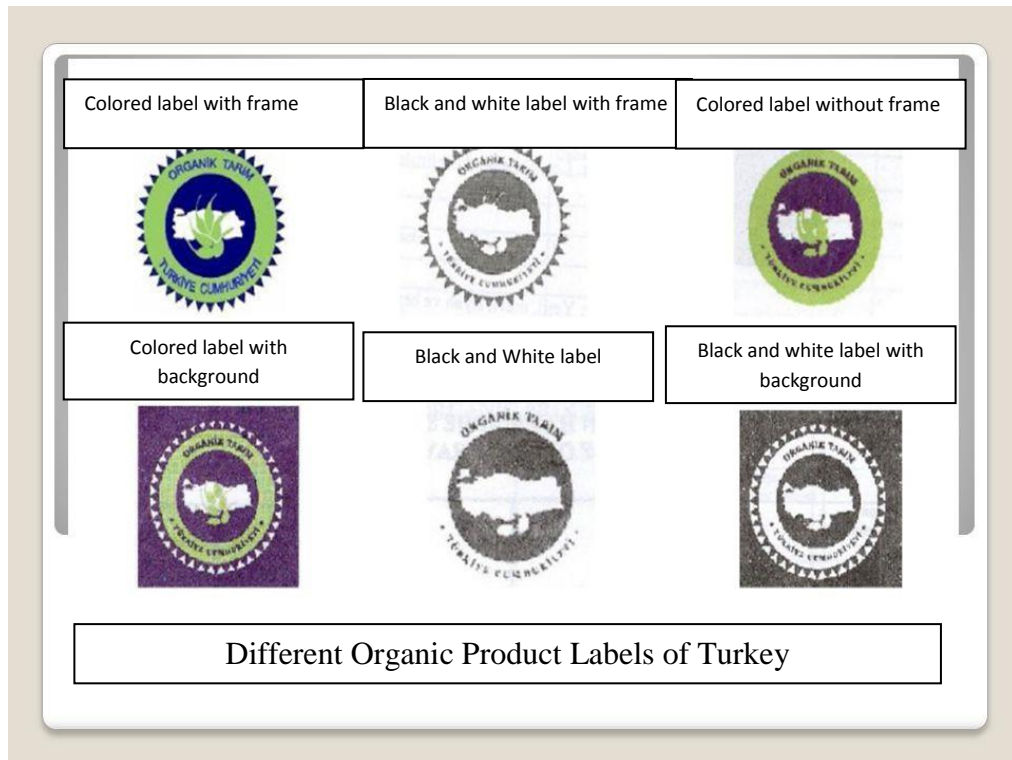


Figure 3.6 Different organic product labels of Turkey

### 3.3. Price and Costs for Organic Agriculture

Different points affecting OA are explained here below:

#### 3.3.1. Price

The price of a product or a service, being the reflection of the product's or service's quality and the brand's reputation on the market among consumers, is also an important element of the economy and marketing.

When it comes to organic products, especially food which is consumed in a very short time, price plays a more important role, as generally organic foods' prices are considerably higher than conventionally produced ones. The price of a product affects how this specific product must be presented to the market and which advertisement channels must be used. It is also affecting the point of view of the consumers on the product, associating it with the reliability of the producer.

Kılıç, Duman, and Bektaş (2014) conducted a study titled "Marketing Strategies of Organic Products and a Field research on Producers". In their study they stated that as producers earn more with OPFs than conventionally produced ones, they are inclined to convert to OPF agriculture. However OA costs more than conventional one. Organic agriculture's and foods' not so much known

subcomponents, such as transportation, stocking and distribution which must be performed fast and in small quantities, special packaging requirements and mostly control and certification procedures, contribute in the increase of OPFs' prices. That is why OAFs are 40% or 80% more expensive than conventional products in Italy (LaVia and Nucifora, 2002) and 150-200% in Turkey.

Considerably high prices of organic products enabled only consumers with high income to consume them. This fact didn't bother much the producers as they are mostly intended to export their organic products with high prices to European importers who are ready to buy. By the development of health and environment care concerns in Turkey, Turkish consumers inclined slowly to consume OPFs instead of conventionally produced ones. This is when, high prices became an issue. As Turkish agriculturists had started to produce organically produced foods because of their high price premiums, making them a good source of income, it reflected negatively on local markets.

However, with developing awareness on organic products' positive effects on human health, environment, sustainability and animal welfare, Turkish consumers showed more interest in paying more than conventional products for organic products. The survey conducted on 543 Turkish respondents for this thesis, has given below outcomes;

Table 3.8 Willingness and non-willingness to pay more for OPFs of survey respondents

<b>Willingness and Non-Willingness To Pay More for OPFs of Survey Respondents</b>					
	<b>Buyers' Frequency</b>	<b>Buyers' Percentage</b>	<b>Non-Buyers' Frequency</b>	<b>Non-Buyers' Percentage</b>	<b>Total</b>
<b>Willing to pay more for OPF</b>	359	91.81	74	48.68	<b>433</b>
<b>Not willing to pay more for OPF</b>	32	8.19	78	51.32	<b>110</b>
<b>Total</b>	<b>391</b>	<b>100</b>	<b>152</b>	<b>100</b>	<b>543</b>

### 3.3.2. Seeds

Seeds used in OF are GMO free and mostly are reserved from the harvest of previous year. This method is providing free of charge seed supply for farmers and thus, makes no addition to the cost of OF.

In some regions organic farmers are exchanging their seeds and hence enabling their seeds to expand on other organic farms.

In Turkey there are few local markets in which farmers can exchange their seeds. Şile Seed Exchange Festival is organized since 2014 for this purpose and provides successful outcomes each year.

### 3.3.3. Control and Certification

Control and certification are the most important aspects of OPFs. This is the only way of proving for the producers that their products are organic. On the other hand certification is the point of reliability for the consumers, justifying considerably high prices they are paying to purchase OPFs. It is in the same time the most costly phase of organic farming.

Each phases of OF is controlled and certified throughout the process to ensure that the dispositions of the OF regulation are respected and fulfilled strictly.

To obtain data on the certification and control fees applied by certification organizations to organic farms eleven letters have been sent to the organizations randomly selected from the ministry's list. Only one of the contacted certification organizations has provided below charts to give an example on fees applied in Turkey.

Table 3.9 Control and certification fee for plant production

<b>Control and Certification Fee for Plant Production</b>		
<b>Covered area production</b>	<b>Open area production</b>	<b>Fee (in TL)</b>
0-20 da	0-100 da	1,000
Over 20 da	Over 100 da	2,000

Table 3.10 Control and certification fee for animal breeding, based on the number of animals

<b>Control and Certification Fee for Animal Breeding, Based on the Number of Animals</b>			
<b>Cattle</b>	<b>Sheep and Goat</b>	<b>Fowl</b>	<b>Fee (in TL)</b>
0-100	0-1,000	0-5,000	1,000
101-200	1,001 - 2,000	5,001 - 7,000	2,000
201 - 300	2,001 - 3,000	7,001 - 10,000	3,000
301 - 400	3,001 - 4,000	10,001 - 12,000	4,000
401 - 500	4,001 - 5,000	Over 12,000	5,000
501 - 700	5,001 - 7,000		6,000
701 - 1,000	7,001 - 10,000		7,000
Over 1,000	Over 1,000		8,000

Table 3.11 Control and certification fee for apiculture based on the number of hives

<b>Control and Certification Fee for Apiculture Based on the Number of Hives</b>	
<b>Number of Hives</b>	<b>Fee (in TL)</b>
0-250	1,000
Over 250	2,000

Table 3.12 Control and certification fee for wild collector of mushrooms and other wild collected food and organic mushroom farmers based on production quantity per year

<b>Control and Certification Fee for Wild Collector of Mushrooms and Other Wild Collected Food and Organic Mushroom Farmers, Based on Production Quantity Per Year</b>	
<b>Estimated Production Quantity per Year</b>	<b>Fee (in TL)</b>
0-50 tons	1,000
51-100 tons	2,000
Over 100 tons	3,000

Table 3.13 Control and certification fee for aquaculture producers, based on the total aquaculture area

<b>Control and Certification Fees for Aquaculture Producers, Based on the Total Aquaculture Area</b>	
<b>Total Aquaculture Area</b>	<b>Fee (in TL)</b>
0- 3,000 m <sup>2</sup>	1,000
1- Over 3,000 m <sup>2</sup>	2,000

As observed on the fees provided by the company, control and certification fees are very high to be faced by small scaled farmers. Seeing the difficulty on bearing these fees alone the same certification organization offers special fees for group of farmers and producers. Taking into consideration high costs of certification, it would be a wise step for small scaled producers to gather and apply collectively for the control and certification of their products by certification organizations.

#### **3.3.4. Packaging and Marketing**

As OPFs do not contain any preservatives or additives to help their conservation, packaging of OPFs aims before all to not damage the product. Therefore, OPFs are packed following procedures and with materials that do not harm the organic features of the product. This process requires more attention than the packaging of CPFs and costs more than any CPFs packaging materials.

Generally, OPFs are packed by two different methods. The first method is that they are packed within special packaging materials that are produced from organic materials. The second method is to coat any non-organic packaging material with an organic material to prevent the contact of the OPF with a non-organic surface. Apparently both methods are costly and they are increasing the price of OPFs.

Small scaled organic food producers, therefore, are mostly delivering their food products from their farm to the house of the consumers by wrapping them in simple craft papers, avoiding high costs of organic packaging.

Marketing is “everything” for a product’s selling. However, especially in our country, there are almost no marketing activities when it comes to OPFs. Taking into consideration considerably high prices of OPFs compared to CPFs, theoretically OPFs need more marketing activities than CPFs, to raise awareness on their features,

to justify their high prices and to convince the consumers to purchase OPFs. Marketing activities of OPFs are conducted mostly by “word of mouth marketing” in Turkey. When a consumer purchases OPF and is pleased with it, s/he tells to his/her friends, neighbors, colleagues and family members. The web sites of small scaled organic farmers are available on the internet, yet they are not popping up as advertisements even if one looks for organic products online, as organic farmers who are struggling with high control and certification costs, demands that are not as high as they have expected, cannot afford advertisement costs. Under the light of these facts, once again gathering small scaled organic farmers under a roof can offer a solution for this problem.



## **CHAPTER FOUR**

### **4. DATA, METHODOLOGY AND HYPOTHESES**

The study has two aims; first one is to see whether gender, civil status, age, number of children in the family and education level of the consumers affect organic product purchase. The second one is to figure out whether the modifications/ameliorations to be carried out on the deterrents can convince the consumers to purchase (for non-buyers) and/or purchase more often (for buyers) organic products. As OPFs agriculture can be a powerful element of the economy, the feedbacks of non-organic product buyers were deemed to be a good indicator on the path leading to increased demand / increased production of OPFs.

For the purpose of the study, a questionnaire, composed of 41 questions, divided into three main and one final section is prepared and sent to the respondents via e-mail. The first section of the questionnaire which contains eleven questions is reserved for demographic questions such as gender, age, education, civil status, residential location, number of children at home or number of household and also who is making food shopping, who is cooking at home. Last question of this section was “Do you purchase organic products?” The following section is arranged under two different schemes; one for the respondents who replied “no” to the last question of the first section and the other for affirmative respondents. Among 543 respondents from 30 cities of Turkey and from 4 foreign countries; 72.1% replied affirmatively to this question, being 391 respondents, while 27.9% replied that they are not purchasing organic products, being 152 respondents. Accordingly the respondents

who said “yes” to the question were directed into the second section of the questionnaire which is arranged specifically for OPFs buyers and the ones who said “no” to the very question are directed to another second section which contains non-buyers specific questions. Finally last question of both second sections is directing the respondents to the last section of the questionnaire composed of one question only, leading them to the submit button eventually. The questionnaire was on line between the dates of November 23, 2018 and December 18, 2018.

While Likert Scale questions are used to determine the attitudes and behaviors of buyers and non-buyers, questions to determine the demographic characteristics of the respondents and to determine how they do reach organic food, or the frequency of consumption and the kind of products they consume are either multiple-choice or yes/no questions.

Likert Scale is ranked as; 5 – Strongly Agree, 4- Agree, 3- Don’t know, 2- Disagree, 1- Strongly Disagree.

The replies of the respondents are tested by chi-square test. Chi-square test shows the relation between two categorical variables. Chi-square test is indicating how much is the difference between observed data and the data which is expected if there were no relationship at all in the population.

The formula here below is used to compute the  $\chi^2$  and to test the hypothesis. The results are interpreted as per the  $\chi^2$  being lower or higher than  $\chi^2$ .

The Formula for Chi Square Is

$$\chi_c^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

**where:**

$c$  = degrees of freedom  
 $O$  = observed value(s)  
 $E$  = expected value(s)

Figure 4.1 Formula for chi-square test

Hypothesis studied and tested for the aim of this thesis are;

- H.1.** Females are more inclined to purchase organic food.
- H.2.** Married people are more inclined to purchase organic food.
- H.3.** Older consumers are more inclined to purchase organic food.
- H.4.** Consumers with children are more inclined to purchase organic food.
- H.5.** Consumers with higher education level are more inclined to purchase organic food.
- H.6.** Cosmetic concerns deter consumers to buy organic food.
- H.7.** Packaging of organically produced food is important for organically produced food buyers.
- H.8.** If consumers can trust the authenticity of the organically produced foods they will purchase / purchase more.

Above hypothesis are tested as the focus of this thesis is on why consumers are not willing to purchase organic foods? What is preventing them to purchase? Why are they still going for conventionally produced products in this era of scientific developments proving that conventional agriculture is harming human body and environment and also animals? Can any change in the market or in the marketing of organically produced foods convince them to purchase? What can those changes be then? Can they be realized?

## CHAPTER FIVE

### 5. EMPIRICAL OUTPUTS

Empirical outputs of the survey which is responded by 543 respondents are provided here below, under three main categories as consumers' demographic details, consumers' buying reasons and deterrents for not-buying and finally consumers' awareness on OPFs.

#### 5.1. Consumers' Demographic Details

##### 5.1.1. Gender

The first question of the survey which is prepared for the research making subject of this thesis was about the gender of the respondents.

A total of 543 consumers responded to this question as; being 283 female and 260 male.

Table 5.1 Frequency and percentage of gender distribution between male and female respondents

<b>Gender Distribution</b>		
<b>Gender</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Female</b>	283	52,12
<b>Male</b>	260	47,88
<b>Total</b>	<b>543</b>	<b>100</b>

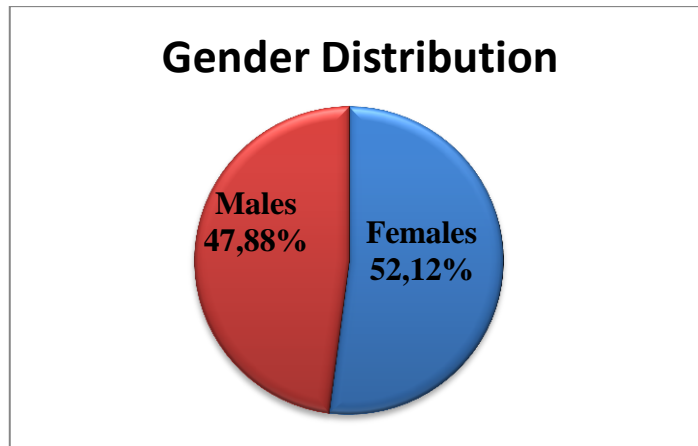


Figure 5.1 Percentage of gender distribution between male and female respondents of the survey

### 5.1.2. Age

The second question of the survey was on the age of the respondents. For the questionnaire, the age was grouped in 7 ranges; younger than 20 years old, between 21 and 30 years old, between 31 and 40 years old, between 41 and 50 years old, between 51 and 61 years old, older than 60 years old.

Respondents replied the question about their age as below:

Table 5.2 Frequency and percentage of age distribution between respondents

<b>Distribution of Age of the Respondents</b>		
<b>Age</b>	<b>Respondent</b>	<b>Percentage</b>
<b>-20</b>	10	1,84
<b>21-30</b>	58	10,68
<b>31-40</b>	73	13,44
<b>41-50</b>	162	29,83
<b>51-60</b>	157	28,91
<b>60+</b>	83	15,29
<b>Total</b>	<b>543</b>	<b>100</b>

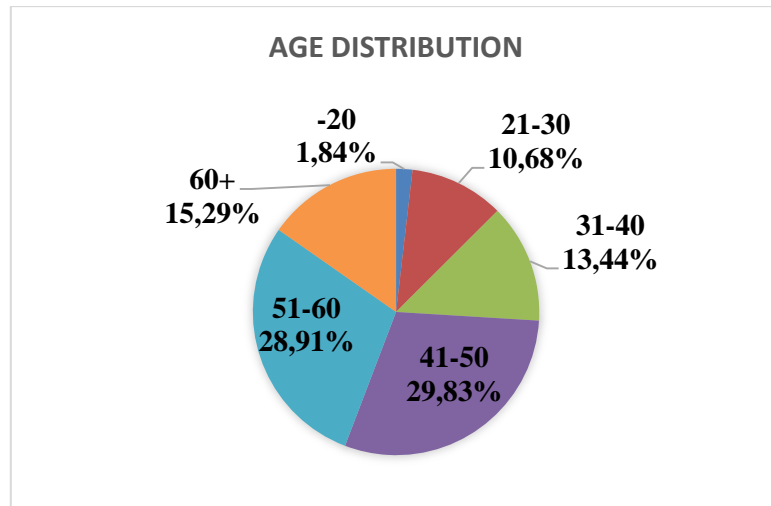


Figure 5.2 Age distribution of the respondents

As observed from the above table and figure, the majority of the respondents are aged between 41 and 50 years old. The respondents who are aged between 51 and 60 years old occupy the second row. Third row is for the respondents who are older than 60 years old. Then come, in a decreasing percentage, the respondents who are aged between 31 and 40 years old, followed by the respondents who are between 21 and 30 years old. The minority is the respondents who are younger than 20 years old.

### 5.1.3. Location

The third question of the survey was about the location the respondents are living in. As the survey was conducted online, the respondents from very different cities of Turkey have replied the question. The respondents who replied to the survey from foreign countries are all Turkish people living abroad.

It is seen that the majority of the respondents are living in Istanbul. There are also 3 respondents who live in Cyprus and 13 respondents who live abroad. Respondents from 30 city of Turkey, out of 81 have replied to the survey based on the location question.

The distribution of the locations the respondents are living is presented here below:

Table 5.3 Frequency and percentage of the location distribution of respondents

<b>Frequency and Percentage of the Location Distribution of Respondents</b>		
<b>Location</b>	<b>Respondents</b>	<b>Percentage</b>
Istanbul	305	56,17
Ankara	34	6,26
Izmir	39	7,18
Adana	19	3,50
Eskişehir	5	0,92
Hatay	17	3,13
Konya	4	0,74
Mersin	10	1,84
Bursa	6	1,10
Balıkesir	4	0,74
Antalya	39	7,18
Samsun	4	0,74
Tekirdağ	5	0,92
Kocaeli	3	0,55
Sakarya	2	0,37
Giresun	1	0,18
Edirne	1	0,18
Kırklareli	1	0,18
Çanakkale	3	0,55
Manisa	2	0,37
Çorum	2	0,37
Muğla	12	2,21
Yalova	1	0,18
Kırşehir	1	0,18
Sivas	1	0,18
Yozgat	1	0,18
Gaziantep	2	0,37
Bolu	1	0,18
Bingöl	1	0,18
Osmaniye	1	0,18
Cyprus	3	0,55
Abroad	13	2,39
<b>Total</b>	<b>543</b>	<b>100</b>

#### 5.1.4. Education

The fourth question of the survey was about the respondents' educational degrees.

The survey showed that only 6 persons out of 543 respondents of the survey had an educational degree in secondary level. 37 respondents had a high school level education. 295 of them had their university degree while 137 had their master degree and 68 had a PhD.

As a result of the survey, the majority of respondents are individuals who had higher education. Percentage distribution of the respondents' education levels is presented by below figure.

Table 5.4 Educational degree distribution among respondents of the survey

<b>Educational Degree Distribution of Respondents</b>		
<b>Educational Level</b>	<b>Respondent</b>	<b>Percentage</b>
<b>Secondary</b>	6	1,1
<b>High School</b>	37	6,89
<b>University</b>	295	54,25
<b>Master</b>	137	25,17
<b>PhD</b>	68	12,59
<b>Total</b>	<b>543</b>	<b>100</b>

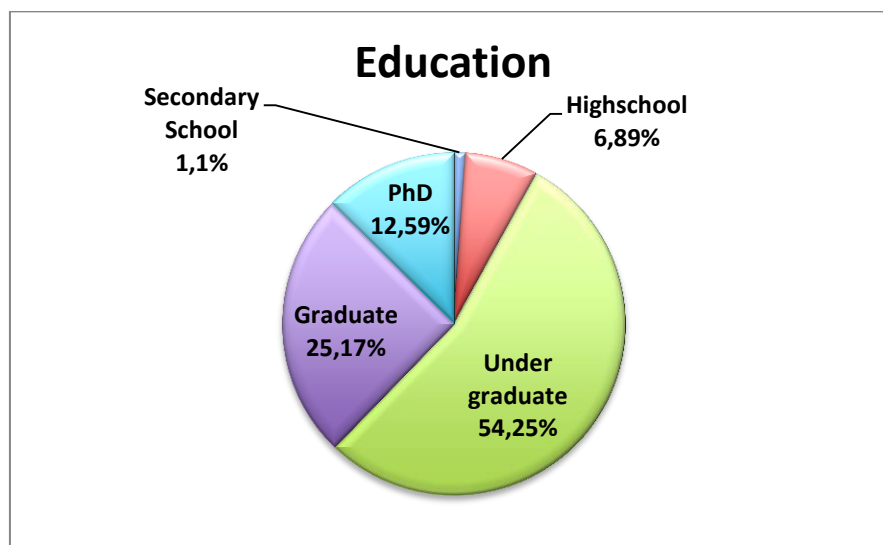


Figure 5.3 Educational degree distribution of respondents



### 5.1.5. Profession

Question number five that is asked to the respondents was about their profession. Professions have been categorized at eight categories. Although being a student may not be considered as a profession, it is also included to the test to collect data concerning students' perception on OPFs.

Table 5.5 Distribution of professions among respondents of the survey

<b>Distribution of Professions</b>		
<b>Professions</b>	<b>Respondents</b>	<b>Percentage</b>
Student	28	5,20
House wife	31	5,80
Artisan	3	0,60
Worker	6	1,10
Civil servant	53	9,80
Private Sector	102	29,80
Self-employed	162	18,40
Other	158	29,30
<b>Total</b>	<b>543</b>	<b>100</b>

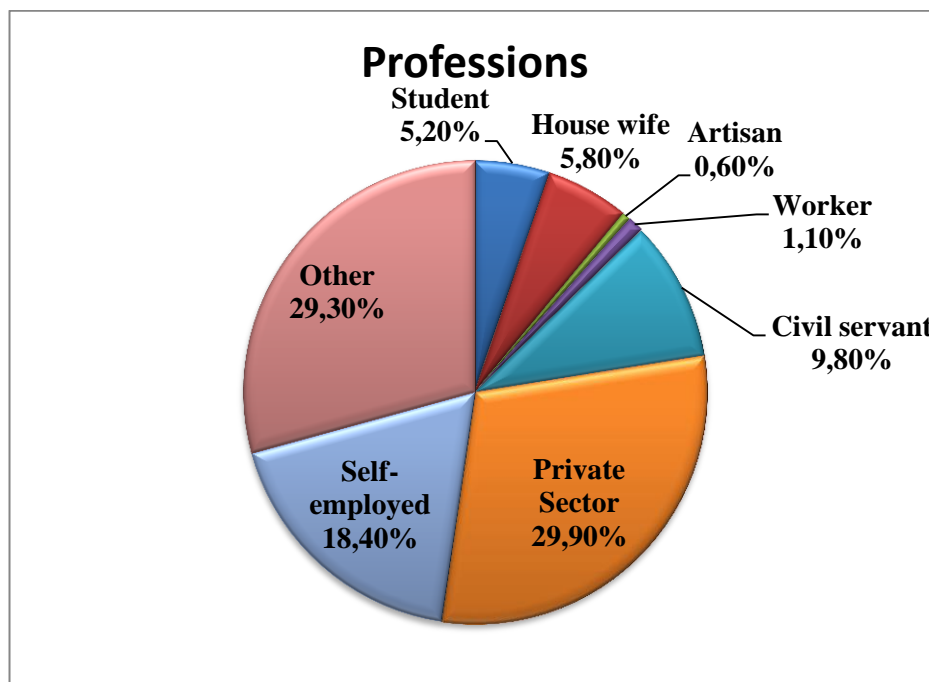


Figure 5.4 Distribution of the respondents as per their professions

### 5.1.6. Civil Status

Sixth question of the survey was about the civil status of the respondents. The replies given by 543 respondents to the survey indicate that 373 of the respondents are married, which is forming the 69,10% of the overall respondents, while 170 are single, being 30,90%.

Table 5.6 Distribution of civil status of respondents

<b>Distribution of Civil Status</b>		
<b>Civil Status</b>	<b>Respondents</b>	<b>Percentage</b>
<b>Single</b>	170	30,90
<b>Married</b>	373	69,10
<b>Total</b>	<b>543</b>	<b>100,00</b>

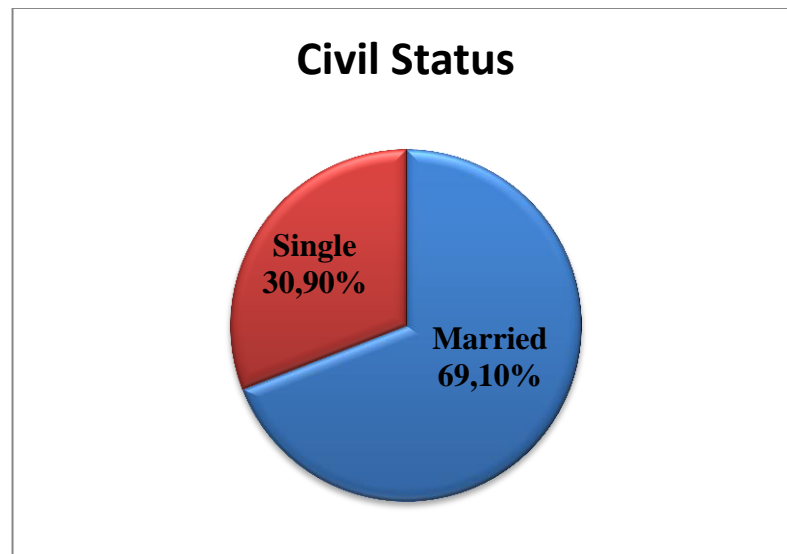


Figure 5.5 Distribution of the respondents based on civil status.

### 5.1.7. Number of Children under Their Care

Seventh question of the survey was asked to gather data about the number of children who are under the care of the respondents. The aim of this question was to determine whether existence of children affects OPF purchase behavior or not.

The distribution of the number of children who are under the care of the respondents is as here below:

Table 5.7 Distribution of the number of children who are under the care of the respondents

<b>Distribution of the Number of Children Under the Care of the Respondents</b>		
<b>Number of Children</b>	<b>Respondents</b>	<b>Percentage</b>
No child	219	40,33
1 child	149	27,44
2 children	160	29,47
3 children	13	2,39
4 children	2	0,37
<b>Total</b>	<b>543</b>	<b>100</b>

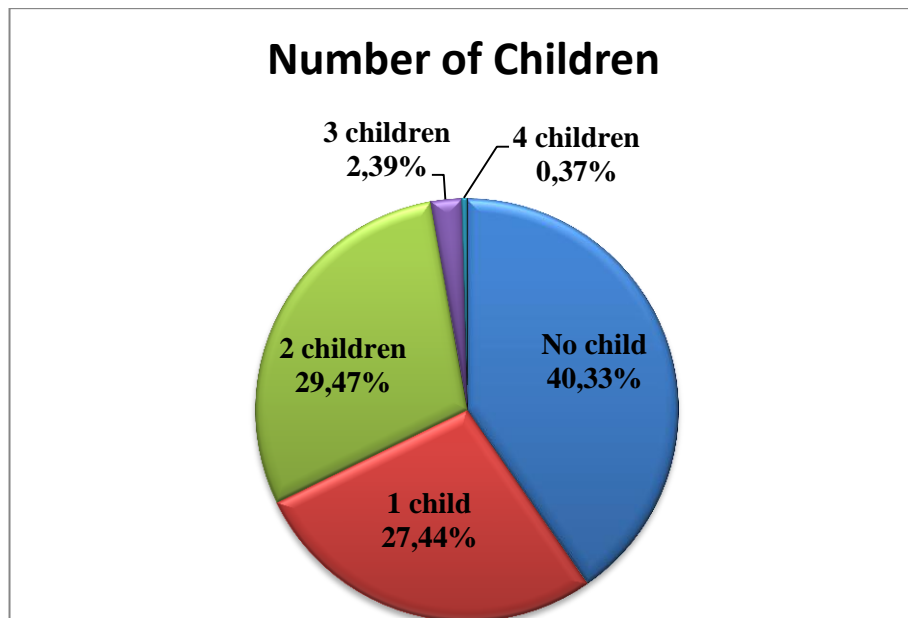


Figure 5.6 Distribution of the number of children who are under the care of the respondents

As it is observed from the replies, majority of the respondents has no child under their care.

### 5.1.8. Total Number of Person in the Household

Question number eight of the survey was asked to determine how many people are living in the household. The distribution of respondents' replies is as here below:

Table 5.8 Distribution of the number of people in the household

<b>Distribution of the Number of People in the Household</b>		
<b>Number of people in the household</b>	<b>Respondents</b>	<b>Percentage</b>
Alone	15	2,76
1 person	53	9,76
2 persons	162	29,83
3 persons	158	29,10
4 persons	129	23,76
5 persons	16	2,95
6 persons	5	0,92
7 persons	3	0,55
9 persons	2	0,37
<b>Total</b>	<b>543</b>	<b>100,00</b>

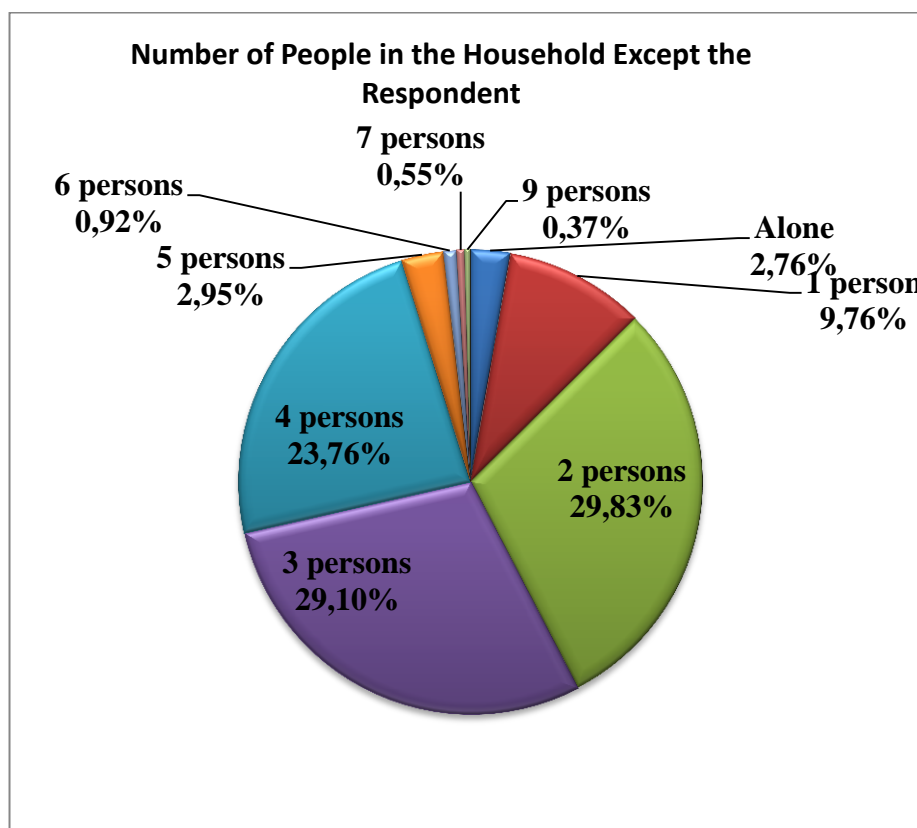


Figure 5.7 Distribution of the number of people in the household

## **5.2. Consumers' Buying Reasons and Deterrents for Not-Buying**

Numerous researches and studies are conducted to perceive and determine consumers' attitudes and behaviors in buying OPFs and their awareness on the matter since early 1990's. As OPF production surely depends on the demand, researchers focused on the consumers' side of this "new approach". Being aware that organically produced foods production can create a huge market and shift its dynamics as well, researchers have studied the reasons which are adopted by consumers to prefer OPFs to conventionally produced ones. Some of these researches are focused on all possible aspects of OPFs consumers (Hughner et al., 2007; Yiridoe et al., 2005). Some other researchers worked only on a specific point of perception such as farm animal welfare and OPFs production (Harper and Makatouni, 2002), food safety and quality (Naspetti and Zanolini, 2002), environment and health (Cicia, Del Giudice, and Ramunno, 2009), (Yılmaz, Çelik and Yağizer, 2009), also egoistic and altruistic aspects of consuming organically produced foods (Kareklas, Carlson and Muehling, 2014).

It is also indicated that consuming OPFs deemed as a consequence of an ideology which proves a specific value system, affecting consumers' attitudes and behaviors as well as their personality measures (Schifferstein and Ophuis, 1998).

Respondents who replied to the survey conducted for this thesis declared that they are purchasing OPFs have also replied by a majority of 34.3% that they are purchasing OPFs twice or 3 times a week. Following rank is consumers who buy OPFs once a week, being 32.2 % of the respondents. 14.5% of the consumers purchase OPFs twice or 3 times a month, while 8.6% purchase on daily basis (mostly daily organic milk to make their own homemade yogurt). On the other hand 4.6% OPFs consumers replied that they purchase once a month, while 2.5% purchase every 2 or 3 months, and 3.3% purchase even rarer.

The data obtained by the survey conducted for this thesis revealed below outcomes as reasons:

### **5.2.1. Reasons**

The outputs of the survey conducted for this thesis revealed below reasons affecting consumers positively in their OPFs purchase.

#### **5.2.1.1. Health**

Many studies conducted since three decades showed that the first motive of organically produced food consumers in buying OPFs is their concern about their health (Davies et al., 1995; Huang, 1996; Hutchins and Greenhalgh, 1997; Schifferstein and Ophuis, 1998; Chinnici et al., 2002; Cengiz and Şenel, 2017).

Hammit (1990) stated that consumers prefer organically produced foods because they think that pesticides used in conventional farming are causing unknown effects on health in long-term.

Ott (1990), Jolly (1991), Wilkins and Hilliers (1994) pointed out that consumers who want to eliminate the existence of chemicals which cause risk for human health and which are not used in organic farming, prefer organically produced foods.

Makatouni (2002), MINTEL (2003), Zanolli and Naspetti (2002), Millock et al. (2004), Padel and Foster (2005), Baltussen et al. (2006) and Botokani et al. (2006) have all pointed out the correlation between security and health aspects of organically produced foods.

Aertsens et al. (2009 and 2010), determined that health is one of the most important factors for consumers in purchasing organically produced foods.

Some consumers associate health aspect of organically produced foods with being more nutritious than conventionally produced ones (Jolly, 1991; Wandel, 1994; Wandel and Bugge (1997), Torjusen et al. (2001) and Hill and Lynchehaun, 2002).

Tregear et al. (1994) conducted a survey in United Kingdom which is quite different among its peers. They have gathered data from retailers of OPFs and also from public through distinct surveys. Their study included 150 supermarkets and 112 wholefood shops, all selected randomly to gather data from OPFs retailers and 242 individuals who were selected also randomly to obtain data from consumers. Their first focus point was if health is one of the main reasons of consumers in demanding for OPFs. Individual consumers were asked why they were demanding for OPFs. As a result of their survey they reached to the conclusion that among individuals who

have replied the survey for consumers' data, 45% were purchasing OPFs as they were concerned for their own health. On the other hand, managers of retail shops, were asked about their opinion on what was the reason for consumers in purchasing OPFs. Here they had different reasons from supermarkets' and wholefood shops' managers. Supermarket managers indicated that consumers were purchasing OPFs because they were concerned about environment (30%), then their own health (27%) and their family's health (27%). When it comes to the wholefood shops, they indicated that consumers were concerned about their own health (41%) and the health of their family (45%) and were asking for OPFs therefore.

Wandel (1994), Wilkins and Hillers (1994), Latacz-Lohmann and Foster (1997), Davies et al. (1995) and Tregear et al. (1994) points out that main reason for consumers to purchase OPFs is that as they contain lower levels of pesticides and fertilizers residues, if any, they are healthier for children.

A survey carried out by Harper and Makatouni (2002) underlines the health and food contamination concerns of consumers.

Gregory (2000), indicated that increasing demand for organically or naturally produced foods is related to personal health as well as other factors.

The study of Jolly et al. (1989) which is conducted in California showed below details on the matter of health-related concerns of consumers on why not purchasing CPFs. Below features of CPFs make consumers prefer purchasing OPFs.

Table 5.9 Concerns of consumers related to conventionally produced foods

<b>Concerns of Consumers Related to Conventionally Produced Foods</b>	
<b>Concerned risk</b>	<b>% of respondents</b>
Residues	62.3
Irradiation	60.0
Fat	51.9
Additives and preservatives	45.2
Salt	44.0
Cholesterol	42.5
Sugar	41.0
Fiber	35.5
Artificial coloring	33.7

Although a lot of researches and studies indicated that “health” factor is one of the most important reasons for OPF buyers in their purchase, there are some researchers who are stating that scientific researches failed to back this aspect in a consistent way (Benbrook et al., 2010; Burton, 2006). Williams (2002) states that there is not indisputable evidence on the nutritiousness of OPFs than conventionally produced ones. In the United Kingdom, the Food Standards Agency (FSA) carried out a study (2009) and concluded that organically and conventionally produced foods have a little nutritional difference, if any. The study also added to the above conclusion that consuming organically produced foods have no additional health benefits. Following this study, Chris Goodall from Carbon Commentary which is a part of the Guardian Environment Network rejected this statement saying that the FSA is misleading people on the matter and that it should revise the summaries of the study they have carried out. Pearson et al. (2010) indicated that health aspect of the OPFs cannot and must not be associated only with the nonexistence of artificial chemicals in them. He pointed out that there are various natural chemicals which are toxic for human beings.

Makatouni (2002) indicated that non-buyers are skeptical when it comes to the health benefits of OPFs.

Brugarolas and Rivers (2005) points out that health concern of consumers is affecting them dominantly in paying considerably higher prices for OPFs.

Grossman (1972), defined OPFs purchase as an investment made on someone’s own health. He also added that loosing health is a very efficient factor for someone to purchase OPFs. According to Bourn and Prescott (2002), nutritious features of OPFs are perceived by consumers as being healthier.

The survey conducted for this thesis proposed statements to determine buyers and non-buyers opinions on the correlation of health and OPFs.

The statements on health aspect of the survey proposed to the buyers are replied as below by the respondents.



Statement 17: The best is to use organic products for our health / for the health of our family.

Table 5.10 Replies provided by respondents to the statement proposed as “The best is to use organic products for our health / for the health of our family”

<b>Replies Provided by Respondents to the Statement Proposed as “The best is to use organic products for our health / for the health of our family”</b>	
<b>Statement 17 For buyers</b>	<b>The best is to use organic products for our health / for the health our family</b>
<b>5-Strongly Agree</b>	137
<b>4-Agree</b>	185
<b>3-Don’t know</b>	55
<b>2-Disagree</b>	14
<b>1-Totally disagree</b>	2

Table 5.11 Weight of replies provided by respondents to the statement proposed as “The best is to use organic products for our health / for the health of our family”

<b>Weight of Replies Provided by Respondents to the Statement Proposed as “The best is to use organic products for our health / for the health of our family”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	137	685	<b>4.12</b>
<b>4</b>	185	740	
<b>3</b>	55	165	
<b>2</b>	14	28	
<b>1</b>	2	2	
<b>Total</b>	<b>393</b>	<b>1620</b>	

As it is observed the weight of the replies provided by 393 OPFs buyers to the statement proposed as “The best is to use organic products for our health / for the health of our family” is computed as **4.12**. Accordingly it is indicated by this result that OPF buyers believe that using OPFs are the best for their own health/ for their family health.

The statement on the health aspect of OPFs is proposed to the non-buyers by a different approach. The statement and the replies provided by non-buyer respondents are as below:

Statement 15: Organic products are not the best for our health / for the health of our family.

Table 5.12 Replies provided by non-buyer respondents to the statement proposed as “organic products are not the best for our health / for the health of our family”

<b>Replies Provided by Non-Buyer Respondents to the Statement Proposed as “Organic products are not the best for our health/for the health of our family”</b>	
<b>Statement 15 For non-buyers</b>	<b>Organic products are not the best for our health/for the health of our family</b>
<b>5-Strongly Agree</b>	8
<b>4-Agree</b>	24
<b>3-Don’t know</b>	34
<b>2-Disagree</b>	57
<b>1-Totally disagree</b>	26

Table 5.13 Weight of the replies provided by non-buyer respondents to the statement proposed as “organic products are not the best for our health / for the health of our family”

<b>Weight of Replies Provided by Respondents to the Statement Proposed as “Organic Products are not the Best for our Health/for the Health of our Family”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	8	40	<b>2.53</b>
<b>4</b>	24	96	
<b>3</b>	34	102	
<b>2</b>	57	114	
<b>1</b>	26	26	
<b>Total</b>	<b>149</b>	<b>378</b>	

As it is observed, the weight of the replies, provided by 149 respondents to the statement “organic products are not the best for our health / for the health of our family” is computed as **2.53**. Accordingly it is indicated by this result that although respondents are not buying OPFs, they think that OPFs are good for their own health / for the health of their family.

### 5.2.1.2 Environmental Concerns

Studies conducted by researchers indicated that environmental concerns are another important factor for consumers to prefer OPFs (Roddy et al., 1996; Wandel and Bugge, 1997; Squires et al., 2001; Soler et al., 2002). According to the studies of Ott (1990), Jolly (1991), Wilkins and Hilliers (1994) pesticides, synthetic fertilizers and other chemicals used by conventional farmers are harming not only human health but harm also the environment.

Mäder et al. (2002) and Fuller et al. (2005) showed by their studies existence of some evidences that are supporting less harming effects of organic farming on the environment.

Sparks and Shepherd (1992), Grunert (1993) and Grunert and Juhl (1995) have associated the inclination towards organically produced food as a result of environmental concerns.

To determine the respondents' point of view on the environmental aspect of buying OPFs, both buyer and non-buyers are proposed a statement on the correlation of OPFs and the environment.

The statements on environmental aspect of the survey proposed to the buyers are replied as below by the respondents.

Statement 18: I prefer organically produced foods because their production doesn't harm the soil, water and air.

Table 5.14 Replies provided by buyers to the statement "I prefer organically produced foods because their production doesn't harm the soil, water and air"

<b>Replies Provided by Buyers to the Statement Proposed as "I prefer organically produced foods because their production doesn't harm the soil, water and air"</b>	
<b>Statement 18 For buyers</b>	<b>I prefer organically produced foods because their production doesn't harm the soil, water and air</b>
<b>5-Strongly Agree</b>	113
<b>4-Agree</b>	203
<b>3-Don't know</b>	41
<b>2-Disagree</b>	34
<b>1-Totally disagree</b>	2

Table 5.15 Weight of the replies provided by buyer respondents to the statement “I prefer organically produced foods because their production doesn’t harm the soil, water and air”

<b>Weight of the Replies Provided by Buyer Respondents to the Statement “I prefer organically produced foods because their production doesn’t harm the soil, water and air”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	113	565	<b>3.99</b>
<b>4</b>	203	812	
<b>3</b>	41	123	
<b>2</b>	34	68	
<b>1</b>	2	2	
<b>Total</b>	<b>393</b>	<b>1570</b>	

It is observed that the weight of the replies provided by 393 OPF buyers for the statement proposed as “I prefer organically produced foods because their production doesn’t harm the soil, water and air” is computed as **3.99**. Accordingly it is indicated by this result that buyers of OPF believe in the environmentally friendly attributes of OPFs.

Statement 26: Using organically produced food shall ensure next generations to live in a healthier environment.

Table 5.16 Replies provided by buyers to the statement “Using organically produced food shall ensure next generations to live in a healthier environment”

<b>Replies Provided by Buyers to the Statement Proposed as “Using organically produced food shall ensure next generations to live in a healthier environment</b>	
<b>Statement 26 For buyers</b>	<b>Using organically produced food shall ensure next generations to live in a healthier environment.</b>
<b>5-Strongly Agree</b>	152
<b>4-Agree</b>	202
<b>3-Don’t know</b>	33
<b>2-Disagree</b>	3
<b>1-Totally disagree</b>	2

Table 5.17 Weight of replies provided by buyers to the statement “Using organically produced food shall ensure next generations to live in a healthier environment”

<b>Weight of Replies Provided by Buyers to the Statement Proposed as “Using organically produced food shall ensure next generations to live in a healthier environment”.</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	152	760	<b>4.27</b>
<b>4</b>	202	808	
<b>3</b>	33	99	
<b>2</b>	3	6	
<b>1</b>	2	2	
<b>Total</b>	<b>392</b>	<b>1675</b>	

It is observed that the weight of the replies provided for the statement “Using organically produced food shall ensure next generations to live in a healthier environment” by 392 OPFs buyer respondents is computed as **4.27**. This result indicated that buyers of OPF believe that consuming OPFs helps to preserve the environment and to legate a healthier environment to the next generations.

The statements on the environmental aspect of organically produced foods are proposed to non-buyers by a different approach. The statements and the replies provided by non-buyer respondents are as below:

Statement 16: Organic agriculture doesn’t contribute that much in a sustainable environment.

Table 5.18 Replies provided by non-buyer respondents to the statement “Organic agriculture doesn’t contribute that much in a sustainable environment”

<b>Replies Provided by Non-Buyer Respondents to the Statement Proposed as “Organic agriculture doesn't contribute that much in a sustainable environment”</b>	
<b>Statement 16 For non-buyers</b>	<b>Organic agriculture doesn't contribute that much in a sustainable environment</b>
<b>5-Strongly Agree</b>	12
<b>4-Agree</b>	18
<b>3-Don’t know</b>	33
<b>2-Disagree</b>	59
<b>1-Totally disagree</b>	29

Table 5.19 Weight of the replies provided by non-buyer respondents to the statement “Organic agriculture doesn’t contribute that much in a sustainable environment”

<b>Weight of Replies Provided by Non-Buyer Respondents to the Statement Proposed as “Organic agriculture doesn't contribute that much in a sustainable environment”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	12	60	<b>2.50</b>
<b>4</b>	18	72	
<b>3</b>	33	99	
<b>2</b>	59	118	
<b>1</b>	29	29	
<b>Total</b>	<b>151</b>	<b>378</b>	

It is observed by the replies provided for the statement “Organic agriculture doesn’t contribute that much in a sustainable environment” by 151 non-buyer of OPFs respondents that the weight is computed as **2.50**. This result indicated that although respondents are not buying OPFs, they think that organically produced foods are good for the preservation of the environment.

### 5.2.1.3. Quality

Studies carried out since decades indicated that quality is one of the main impulses in all human beings’ life. It is observed by conducted studies that consumers believe to the health aspect of OPFs as a quality parameter (Wandel and Bugge, 1997; Magnusson et al., 2001).

According to Pearson and Henryks (2008) the quality of the consumed food is related to its freshness and its taste. Consumers expect from suppliers to deliver fresher food.

Quality is also associated with the high price premium paid for OPFs. As consumers are paying considerably high prices to purchase OPFs, their expectations on the quality of the food they purchase is generally higher than they expect from CPFs.

Therefore quality aspect is asked to the respondents of the survey by statements “Organic products are of higher quality” and “Using organic products

affects our life quality in a better way”. These statements are proposed to the respondents who have replied “yes” to the question “Do you buy organic food?”

Statement 24: Organic products are of higher quality.

Table 5.20 Replies provided by buyer respondents to the statement “Organic products are of higher quality”

<b>Replies Provided by Buyer Respondents to the Statement Proposed as “Organic Products are of Higher Quality”</b>	
<b>Statement 24 for Buyers</b>	<b>Organic products are of higher quality</b>
<b>5-Strongly Agree</b>	90
<b>4-Agree</b>	201
<b>3-Don’t know</b>	79
<b>2-Disagree</b>	18
<b>1-Totally disagree</b>	4

Table 5.21 Weight of the replies provided by buyer respondents to the statement “Organic products are of higher quality”

<b>Weight of the Replies Provided by Buyer Respondents to the Statement Proposed as “Organic Products are of higher quality”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	90	450	<b>3.90</b>
<b>4</b>	201	804	
<b>3</b>	79	237	
<b>2</b>	18	36	
<b>1</b>	4	4	
<b>Total</b>	<b>392</b>	<b>1531</b>	

It is observed that the weight of the replies provided for the statement “Organic products are of higher quality” by 392 buyers of OPFs respondents is computed as **3.90**. This result indicated that OPF buyers think that OPFs are of a higher quality.

Statement 25: Using organic products affects our life quality in a better way.

Table 5.22 Replies provided by buyer respondents to the statement “Using organic products affects our life quality in a better way”

<b>Replies Provided by Buyer Respondents to the Statement Proposed as “Using organic products affects our life quality in a better way”</b>	
<b>Statement 25 For Buyers</b>	<b>Using organic products affects our life quality in a better way</b>
<b>5-Strongly Agree</b>	124
<b>4-Agree</b>	207
<b>3-Don’t know</b>	52
<b>2-Disagree</b>	6
<b>1-Totally disagree</b>	3

Table 5.23 Weight of the replies provided by buyer respondents to the statement “Using organic products affects our life quality in a better way”

<b>Weight of the Replies Provided by Buyer Respondents to the Statement Proposed as “Using organic products affects our life quality in a better way”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	124	620	<b>4.13</b>
<b>4</b>	207	828	
<b>3</b>	52	156	
<b>2</b>	6	12	
<b>1</b>	3	3	
<b>Total</b>	<b>392</b>	<b>1619</b>	

It is observed that the weight of the replies provided for the statement “Using organic products affects our life quality in a better way” by 392 buyers of OPFs respondents is computed as **4.13**. This result indicates that OPFs buyers strongly believe that using organic products affects their life quality in a better way.

#### **5.2.1.4. Taste**

Taste is found to be one of the factors affecting consumers purchase choice on organically produced foods in surveys and researches conducted by Roddy et al. (1996) in Ireland, Schifferstein and Ophuis (1998) in Netherlands, Hill and Lynchehaun (2002) in the United Kingdom and Magnusson et al. (2003) in Sweden. Hill and Lynchehaun (2002) also pointed out that as consumers pay a considerably



higher price for OPFs compared to conventionally produced ones, they tend to think that OPFs must be of a higher quality and of a better taste than conventionally produced ones. Fillion and Arazi (2002) carried out a series of blind taste-tests for organic and non-organic milk and orange juice. Their test showed that subjects didn't state any differences when they tasted organic and non-organic milk. When they tasted organic and non-organic orange juice, they indicated that organic orange juice tastes better than the non-organic one. Accordingly, they pointed out that the perception of "better taste" for OPFs cannot be generalized for all kind of organic foods.

To determine the effect of taste on the consumers of OPFs, the survey proposed a statement to the buyers and non-buyers. Their replies have provided following data.

Statement 20: Taste/odor of organically produced food is better than the ones which are not organic.

Table 5.24 Replies provided by buyer respondents to the statement "Taste/odor of organically produced food is better than the ones which are not organic"

<b>Replies Provided by Buyer Respondents to the Statement Proposed as "Taste/odor of organically produced food is better than the ones which are not organic"</b>	
<b>Statement 20 For buyers</b>	<b>Taste/odor of organically produced food is better than the ones which are not organic.</b>
<b>5-Strongly Agree</b>	137
<b>4-Agree</b>	176
<b>3-Don't know</b>	52
<b>2-Disagree</b>	20
<b>1-Totally disagree</b>	7

Table 5.25 Weight of the replies provided by buyer respondents to the statement “Taste/odor of organically produced food is better than the ones which are not organic”

<b>Weight of the Replies Provided by Buyer Respondents to the Statement Proposed as “Taste/odor of organically produced food is better than the ones which are not organic”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	137	685	<b>4.06</b>
<b>4</b>	176	704	
<b>3</b>	52	156	
<b>2</b>	20	40	
<b>1</b>	7	7	
<b>Total</b>	<b>392</b>	<b>1592</b>	

It is observed that the weight of the replies provided for the statement “Taste/odor of organically produced food is better than the ones which are not organic” by 392 buyers of OPFs respondents is computed as **4.06**. This result indicates that OPF buyer respondents deem OPFs as tastier than CPFs and they deem that OPFs smells better than CPFs.

To determine the opinion of non-buyers of OPFs, the statement related to the taste and odor of OPFs is proposed in a different way to the respondents who declared that they are not purchasing OPFs. Their replies and weight of the replies provided for this statement by non-buyer respondents are as follows:

Statement 18: Taste/odor of organically produced food is not better than non-organic ones.

Table 5.26 Replies provided by non-buyer respondents to the statement “Taste/odor of organically produced food is not better than non-organic ones”

<b>Replies Provided by Non-Buyer Respondents to the Statement Proposed as “Taste/odor of organic products is not better than non-organic ones”</b>	
<b>Statement 18 For non-buyers</b>	<b>Taste/odor of organic products is not better than non-organic ones</b>
<b>5-Strongly Agree</b>	14
<b>4-Agree</b>	22
<b>3-Don’t know</b>	50
<b>2-Disagree</b>	47

<b>1-Totally disagree</b>	18
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Table 5.27 Weight of the replies provided by non-buyer respondents to the statement “Taste/odor of organically produced food is not better than non-organic ones”

<b>Weight of the Replies Provided by Non-Buyer Respondents to the Statement Proposed as “Taste/odor of organic products is not better than non-organic ones”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	14	70	<b>2.78</b>
<b>4</b>	22	88	
<b>3</b>	50	150	
<b>2</b>	47	94	
<b>1</b>	18	18	
<b>Total</b>	<b>151</b>	<b>420</b>	

It is observed that the weight of the replies provided for the statement “Taste/odor of organically produced food is not better than non-organic ones” by 151 non-buyers of OPFs respondents is computed as **2.78**. This result indicates that although they are not purchasing OPFs, even non-buyers think that OPFs are tastier than CPFs and that they smell better.

#### **5.2.1.5. Nostalgia**

A study conducted by Cinnici et al. (2002) indicated a factor called “nostalgia” or purchasing OPFs. Nostalgia can be explained as yearning for childhood taste and odor in foods that are consumed. Consumers who prefer OPFs for the reason of nostalgia generally associate OPFs with the tastes and odor, as well as the authenticity of the food they remember from their past.

To determine the effect of nostalgia on the consumers, the survey proposed a statement on this matter also. The aim was to see if consumers’ nostalgia for their childhood tastes/odors were affecting their purchase choice for OPFs.

Statement 21: Organically produced foods provide the taste/odor of the food of our childhood times.

Table 5.28 Replies provided by buyer respondents to the statement “Organically produced foods provide the taste/odor of the food of our childhood times”.

<b>Replies Provided by Buyer Respondents to the Statement Proposed as “Organically produced foods provide the taste/odor of the food of our childhood times”</b>	
<b>Statement 21 For buyers</b>	<b>Organically produced foods provide the taste/odor of the food of our childhood times</b>
<b>5-Strongly Agree</b>	86
<b>4-Agree</b>	173
<b>3-Don’t know</b>	83
<b>2-Disagree</b>	35
<b>1-Totally disagree</b>	14

Table 5.29 Weight of the replies provided by buyer respondents to the statement “Organically produced foods provide the taste/odor of the food of our childhood times”.

<b>Weight of the Replies Provided by Buyer Respondents to the Statement Proposed as “Organically produced foods provide the taste/odor of the food of our childhood times”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	86	430	<b>3.72</b>
<b>4</b>	173	692	
<b>3</b>	83	249	
<b>2</b>	35	70	
<b>1</b>	14	14	
<b>Total</b>	<b>391</b>	<b>1455</b>	

It is observed that the weight of the replies provided for the statement “Organically produced foods provide the taste/odor of the food of our childhood times” by 391 buyers of OPFs respondents is computed as **3.72**. This result indicates that OPF buyer respondents that they do find the taste and/or odor of their childhood times in OPFs.

The same aspect is proposed to non-buyers by a different statement.

Statement 21: Organically produced foods are not providing the taste/odor of my childhood which I recall and long for.

Table 5.30 Replies provided by non-buyer respondents for the statement “Organically produced foods are not providing the taste/odor of my childhood which I recall and long for”

<b>Replies Provided by Non-Buyer Respondents for the Statement Proposed as “Organically produced foods are not providing the taste/odor of my childhood which I recall and long for”</b>	
<b>Statement 19 For non-buyers</b>	<b>“Organically produced foods are not providing the taste/odor of my childhood which I recall and long for”</b>
<b>5-Strongly Agree</b>	32
<b>4-Agree</b>	52
<b>3-Don’t know</b>	41
<b>2-Disagree</b>	16
<b>1-Totally disagree</b>	10

Table 5.31 Weight of the replies provided by non-buyer respondents to the statement “Organically produced foods are not providing the taste/odor of my childhood which I recall and long for”

<b>Weight of the Replies Provided by Non-Buyer Respondents to the Statement Proposed as “Organically produced foods are not providing the taste/odor of my childhood which I recall and long for”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	32	160	<b>3.52</b>
<b>4</b>	52	208	
<b>3</b>	41	123	
<b>2</b>	16	32	
<b>1</b>	10	10	
<b>Total</b>	<b>151</b>	<b>533</b>	

It is observed by the weight of the replies provided for the statement “Organically produced foods are not providing the taste/odor of my childhood which I recall and long for” by 151 non-buyers of OPFs respondents is computed as **3.52**. This result indicates that although they are not purchasing OPFs non-buyers do think that OPFs are providing their childhood times taste/odor.

#### **5.2.1.6. Welfare of Animals**

Studies show that most of the OPF consumers are concerned about the welfare of animals (Mintel, 1996; Bennett, 1996). These consumers are willing to pay more to provide proper standards for animal welfare.

Animal welfare concern of OPF buyers is a multi-leveled perception according to Torjusen et al., (2001) and Harper and Makatouni (2002). Consumers prefer OPFs because of nutritional (food quality and safety) and social (proper treatment of animals) aspects. Animal welfare also has an ethical aspect. Hill and Lynchehaun (2002) and Aarset et al. (2004) state that welfare of animals is a motivating factor for OPF buyers although it is not as weighted as health and environment factors.

In the survey of Harper and Makatouni (2002) a respondent replied stating that she, in fact doesn't see any difference between free-range and non-free-range eggs; but that she prefers buying free-range eggs because she doesn't like the idea that chickens are kept inside boxes or cages. Another respondent of the same survey stated that the life of the animal affects definitely the quality of its meat.

Although there are surveys conducted on consumers' perception concerning welfare of animals during OPF production (Mintel, 1994; Fiddes, 1991; Webster, 1995) there are just few studies which are published on the subject (Carruthers, 1991).

A study funded by European Union (EU) (2001), is conducted concerning concerns on welfare of animals among consumers and its impact on food choice. The survey revealed consumers' point of view on the welfare of animals. According to the survey consumers were defining welfare of animals with regard to natural rearing and humane slaughter. It also revealed that consumers were associating welfare of animal as an indicator of food quality and safety.

To observe the opinion of consumers on the welfare of animals when it comes to food production, the survey proposed a statement to the respondents. The aim was to determine what their point of view is on the correlation between animal welfare and OPFs.

Statement 23: Animals are not harmed while producing organic food.

Table 5.32 Replies provided by buyer respondents for the statement “Animals are not harmed while producing organic food”

<b>Replies Provided by Buyer Respondents for the Statement Proposed as “Animals are not harmed while producing organic food”</b>	
<b>Statement 23 For Buyers</b>	<b>Animals are not harmed while producing organic food.</b>
<b>5-Strongly Agree</b>	62
<b>4-Agree</b>	152
<b>3-Don’t know</b>	134
<b>2-Disagree</b>	43
<b>1-Totally disagree</b>	1

Table 5.33 Weight of the replies provided by buyer respondents for the statement “Animals are not harmed while producing organic food”

<b>Weight of the Replies Provided by Buyer Respondents for the Statement Proposed as “Animals are not harmed while producing organic food”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	62	310	<b>3.58</b>
<b>4</b>	152	608	
<b>3</b>	134	402	
<b>2</b>	43	86	
<b>1</b>	1	1	
<b>Total</b>	<b>392</b>	<b>1407</b>	

It is observed by the weight of the replies provided for the statement “Animal are not harmed while producing organic food” by 392 buyers of OPFs respondents is computed as **3.58**. This result indicates that buyers of OPFs do think that animals’ welfare is maintained and preserved while producing OPFs.

To observe the point of view of non-buyer consumers the statement is proposed in a different way.

Statement 22: It is not that much possible that animals are not harmed during organic food production.

Table 5.34 Replies provided by non-buyer respondents for the statement “It is not that much possible that animals are not harmed during organic food production”

<b>Replies Provided by Non-Buyer Respondents for the Statement Proposed as “It is not that much possible that animals are not harmed during organic food production”</b>	
<b>Statement 22 For non-buyers</b>	<b>It is not that much possible that animals are not harmed during organic food production</b>
<b>5-Strongly Agree</b>	12
<b>4-Agree</b>	39
<b>3-Don’t know</b>	37
<b>2-Disagree</b>	54
<b>1-Totally disagree</b>	9
<b>Total</b>	<b>151</b>

Table 5.35 Weight of the replies provided by non-buyer respondents for the statement “It is not that much possible that animals are not harmed during organic food production”

<b>Weight of the Replies Provided by Non-Buyer Respondents for the Statement Proposed as “It is not that much possible that animals are not harmed during organic food production”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	12	60	<b>2.94</b>
<b>4</b>	39	156	
<b>3</b>	37	111	
<b>2</b>	54	108	
<b>1</b>	9	9	
<b>Total</b>	<b>151</b>	<b>444</b>	

It is observed by the weight of the replies provided for the statement “It is not possible that animals are not harmed during organic food production” by 151 non-buyers of OPFs respondents is computed as **2.94**. This result indicates that although they do not purchase OPFs, they still do think that animals’ welfare is maintained and preserved while producing OPFs.

#### **5.2.1.7. Supporting Local Farmers**

Studies of Fotopoulos and Krystallis (2002), Kolodinsky and Pelch (1997), Brown (2003), Eastwood et al. (1999), Govindasamy et al. (2002) and Kezis et al.



(1998) all indicate that the idea of supporting local farmers is a factor in purchasing OPFs. This factor is highly associated with aim of obtaining fresh food and food quality. Consumers do think that purchasing OPFs directly from local farmers shall support them and they will continue to work in OA, providing the consumers with fresh and quality food.

To determine the opinion of buyers and non-buyers of OPF, the survey conducted for this thesis proposed below statements to the respondents.

Statement 22: Consuming organically produced foods supports small scaled local producers.

Table 5.36 Replies provided by buyer respondents for the statement “Consuming organically produced foods supports small scaled local producers”

<b>Replies Provided by Buyer Respondents for the Statement Proposed as “Consuming organically produced foods supports small scaled local producers”</b>	
<b>Statement 22 for buyers</b>	<b>Consuming organically produced foods supports small scaled local producers</b>
<b>5-Strongly Agree</b>	94
<b>4-Agree</b>	184
<b>3-Don’t know</b>	75
<b>2-Disagree</b>	36
<b>1-Totally disagree</b>	4

Table 5.37 Weight of the replies provided by buyer respondents for the statement “Consuming organically produced foods supports small scaled local producers”

<b>Weight of the Replies Provided by Buyer Respondents for the Statement Proposed as “Consuming organically produced foods supports small scaled local producers”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	94	470	<b>3.84</b>
<b>4</b>	184	736	
<b>3</b>	75	225	
<b>2</b>	36	72	
<b>1</b>	4	4	
<b>Total</b>	<b>393</b>	<b>1507</b>	

It is observed that the weight of the replies provided for the statement “Consuming organically produced foods supports small scaled local producers” by

393 buyers of OPFs respondents is computed as **3.84**. This result indicates that non-buyers also think that purchasing OPFs, from small scaled local farmers is a support for them.

The same subject is proposed to non-buyers of OPFs in a different way to determine their point of view.

Statement 20: Consuming organically produced foods doesn't support that much small scaled local producers.

Table 5.38 Replies provided by non-buyer respondents for the statement “Consuming organically produced foods doesn't support that much small scaled local producers”

<b>Replies Provided by Non-Buyer Respondents for the Statement Proposed as “Consuming organically produced foods doesn't support that much small scaled local producers”</b>	
<b>Statement 20 For non-buyers</b>	<b>Consuming organically produced foods doesn't support that much small scaled local producers</b>
<b>5-Strongly Agree</b>	17
<b>4-Agree</b>	50
<b>3-Don't know</b>	35
<b>2-Disagree</b>	40
<b>1-Totally disagree</b>	8

Table 5.39 Weight of the replies provided by non-buyer respondents for the statement “Consuming organically produced foods doesn't support that much small scaled local producers”

<b>Weight of the Replies Provided by Non-Buyer Respondents for the Statement Proposed as “Consuming organically produced foods doesn't support that much small scaled local producers”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	17	85	<b>3.18</b>
<b>4</b>	50	200	
<b>3</b>	35	105	
<b>2</b>	40	80	
<b>1</b>	8	8	
<b>Total</b>	<b>150</b>	<b>478</b>	

It is observed that the weight of the replies provided for the statement “Consuming organically produced foods doesn't support that much small scaled local producers” by 150 non-buyers of OPFs respondents is computed as **3.18**.

This result indicates that even they are not purchasing OPFs, they do think that purchasing OPFs from small scaled local farmers is supporting them.

### 5.2.2. Deterrents

Deterrents are the factors that discourage people from doing something. Deterrents are important as they are preventing positive attitude of consumers towards OPFs to be transformed into purchasing behavior. As this thesis is aiming to determine how OPFs can be made a value added to the economy, the deterrents for purchasing OPFs are studied.

Researchers have conducted several studies on determining the deterrents preventing consumers to purchase OPFs or to purchase OPFs more often, in other words, regularly.

Jolly (1991) determined two different groups of deterrents for consumers.

The first group of deterrents is for the consumers who have stopped purchasing organic foods.

Table 5.40 Deterrents which caused consumers to stop purchasing OPFs

<b>Deterrents For Consumers Who Stopped Purchasing</b>	
<b>Deterrents</b>	<b>% of Respondents</b>
High prices	56.9
Shops' location (difficulty in accessing)	53.5
Time spent in searching the product	47.1
Respondents who do not know the reason	8.9
Appearance (cosmetic concerns)	6.8
Flavor (taste)	5.8
Color	5.8
Quality	5.3

The second group of deterrents is for the consumers who never purchased organic foods. The deterrents of this group are listed as below:

Table 5.41 Deterrents for consumers who never purchased organically produced foods

<b>Deterrents For Consumers Who Never Purchased Organically</b>
---

<b>Produced Foods</b>	
<b>Deterrents</b>	<b>% of Respondents</b>
Availability	43.4
High prices	41.3
Time spent in searching the product	34.8
Not thinking that organically produced foods are better than conventionally produced foods	27.3
Shops' location (difficulty in accessing)	16.1
Respondents who do not know the reason	16.1
Appearance (cosmetic concerns)	13.3
Shelf life (quick spoiling)	10.5
Quality standards	4.2
Flavor (taste)	4.2
Other reasons	9.2

The study conducted for this thesis determined below deterrents for consumers in purchasing OPFs.

#### **5.2.2.1. Excessive Price**

Krämer et al. (1998), Fricke and von Alvensleben (1997), Meier-Ploeger et al. (1996), Hack (1995), Jolly (1991), Haest (1990), Padel and Foster (2005) and Geen and Firth (2006) all have highlighted that high prices of OPFs are one of the most important deterrents for consumers in not purchasing OPFs.

In their study Michelsen et al. (1999) stated that high prices are reduced when the volumes are increased and the sales are provided through more accessible locations such as supermarkets.

Aertsens et al. (2011) determined that excessive prices of organically produced foods as deterrent factor number one for not buying organic foods.

In the survey, the respondents – both buyers and non-buyers- were proposed two statements which were specific on high prices of organic foods.

OPF buyers replied the statement as detailed here below:

Statement 13: Prices of organically produced products are higher than non-organic products

Table 5.42 Replies provided by buyer respondents for the statement “prices of organically produced products are higher than non-organic products”

<b>Replies Provided by Buyer Respondents For the Statement Proposed as “prices of organically produced products are higher than non-organic products”</b>	
<b>Statement 31 for Buyers</b>	<b>Prices of organic products are higher than non-organic products</b>
<b>5-Strongly Agree</b>	200
<b>4-Agree</b>	173
<b>3-Don’t know</b>	8
<b>2-Disagree</b>	11
<b>1-Totally disagree</b>	0

Table 5.43 Weight of the replies provided by buyer respondents for the statement “prices of organically produced products are higher than non-organic products”

<b>Weight of the Replies Provided by Buyer Respondents for the Statement Proposed as “prices of organically produced products are higher than non-organic products”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	200	1000	<b>4.43</b>
4	173	692	
3	8	24	
2	11	22	
1	0	0	
<b>Total</b>	<b>392</b>	<b>1738</b>	

It is observed that the weight of the replies provided for the statement “Prices of organically produced products are higher than non-organic products” by 392 buyer respondents is computed as **4.43**. This result indicates that they do think that the prices of OPFs are higher than non-organic ones.

Statement 32: Had the prices of organically produced products lower they can be purchased more frequently.

Table 5.44 Replies given to the statement “Had the prices of organically produced products lower they can be purchased more frequently” by buyers of OPFs

<b>Replies Given to the Statement “Had the prices of organically produced products lower they can be purchased more frequently” by buyers of OPFs</b>	
<b>Statement 32 for Buyers</b>	<b>Had the price of organic product lower, they can be purchased more frequently</b>
<b>5-Strongly Agree</b>	209
<b>4-Agree</b>	157
<b>3-Don’t know</b>	12
<b>2-Disagree</b>	11
<b>1-Totally disagree</b>	2

Table 5.45 Weight of the replies given to the statement “Had the prices of organically produced products lower they can be purchased more frequently” by buyers of OPFs

<b>Weight of the Replies Given to the Statement “Had the prices of organically produced products lower they can be purchased more frequently” by buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	209	1045	<b>4.43</b>
4	157	628	
3	12	36	
2	11	22	
1	2	2	
<b>Total</b>	<b>391</b>	<b>1733</b>	

It is observed that the weight of the replies provided for the statement “Had the prices of organically produced products lower they can be purchased more frequently” by 391 buyer respondents is computed as **4.43**. This result indicates that buyers of OPF do think that in case the prices of OPFs decrease they shall purchase OPFs more frequently.

Same subject is determined with regard to non-buyers of OPFs through following statements.

Statement 28: Organic products are not purchased more often as their prices are higher than non-organic ones.

Table 5.46 Replies given to the statement “Organic products are not purchased more often as their prices are higher than non-organic ones” by non-buyers of OPFs

<b>Replies Given to the Statement “Organic products are not purchased more often as their prices are higher than non-organic ones” by non-buyers of OPFs</b>	
<b>Statement 28 For non-buyers</b>	<b>Organic products are not purchased more often as their prices are higher than non-organic ones</b>
<b>5-Strongly Agree</b>	77
<b>4-Agree</b>	63
<b>3-Don’t know</b>	3
<b>2-Disagree</b>	5
<b>1-Totally disagree</b>	2

Table 5.47 Weight of the replies given to the statement “Organic products are not purchased more often as their prices are higher than non-organic ones” by non-buyers of OPFs

<b>Weight of the replies Given to the Statement “Organic products are not purchased more often as their prices are higher than non-organic ones” by non-buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	77	385	<b>4.38</b>
4	63	252	
3	3	9	
2	5	10	
1	2	2	
<b>Total</b>	<b>150</b>	<b>658</b>	

It is observed that the weight of the replies provided for the statement “Organic products are not purchased more often as their prices are higher than non-organic ones” by 150 non-buyer respondents is computed as **4.38**. This result indicates that although they are not purchasing OPFs, they do think that prices of OPFs are higher than non-organic ones and this fact is a deterrent in their purchase.

Statement 30: Had the price of organic products not expensive they could be purchased more often.

Table 5.48 Replies given to the statement “Had the prices of organic products not expensive they could be purchased more often” by non- buyers of OPFs

<b>Replies Given to the Statement “Had the prices of organic products not expensive they could be purchased more often” by non- buyers of OPFs</b>	
<b>Statement 30 for non-buyers</b>	<b>Had the price of organic products not expensive they could be purchased more often.</b>
<b>5-Strongly Agree</b>	70
<b>4-Agree</b>	59
<b>3-Don’t know</b>	13
<b>2-Disagree</b>	6
<b>1-Totally disagree</b>	2

Table 5.49 Weight of the replies given to the statement “Had the prices of organic products not expensive they could be purchased more often” by non- buyers of OPFs

<b>Weight of the Replies Given to the Statement “Had the prices of organic products not expensive they could be purchased more often” by non- buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	70	350	<b>4.26</b>
4	59	236	
3	13	39	
2	6	12	
1	2	2	
<b>Total</b>	<b>150</b>	<b>639</b>	

It is observed that the weight of the replies provided for the statement “Had the prices of organic products not expensive they could be purchased more often” by 150 non-buyer respondents is computed as **4.26**. This result indicates that they do think that high prices of OPFs are a deterrent in their purchase and had it lower, OPFs could be purchased more often.



Non-buyers are also proposed another statement to determine their point of view on the correlation between high prices of organically produced foods and their benefits.

Statement 29: The benefits of organic products do not justify their high prices.

Table 5.50 Replies given to the statement “The benefits of organic products do not justify their high prices” by non- buyers of OPFs

<b>Replies Given to the Statement “The benefits of organic products do not justify their high prices” by non- buyers of OPFs</b>	
<b>Statement 29 for non-buyers</b>	<b>The benefits of organic products do not justify their high prices.</b>
<b>5-Strongly Agree</b>	23
<b>4-Agree</b>	56
<b>3-Don’t know</b>	39
<b>2-Disagree</b>	28
<b>1-Totally disagree</b>	5

Table 5.51 Weight of the replies given to the statement “The benefits of organic products do not justify their high prices” by non- buyers of OPFs

<b>Weight of the Replies Given to the Statement “The benefits of organic products do not justify their high prices” by non- buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	23	115	<b>3.42</b>
4	56	224	
3	39	117	
2	28	56	
1	5	5	
<b>Total</b>	<b>151</b>	<b>517</b>	

It is observed by the weight of the replies provided for the statement “The benefits of organic products do not justify their high prices” by 151 non-buyer respondents is computed as **3.42**. This result indicated that non-buyers of OPF mostly do think that the benefits of OPFs are not justifying their high prices.

### 5.2.2.2. Not Being Available Everywhere

Studies conducted to determine the deterrents for not-buying OPF have revealed lack of availability / not being available everywhere as an important factor. Zanolini and Naspetti (2002) conducted a research in Italy and indicated not being available everywhere as an obstacle for buying OPFs. Makatouni (2000) pointed out not being available everywhere as a deterrent for not-buying OPFs. 26% of Welsh consumers, according to MINTEL (2000) survey declared that they don't know where to get OPFs. 35% declared that they find OPFs difficultly. Researches conducted by Boccaletti and Nardella (2000), Magnusson et al. (2001), Fotopoulos and Krystallis (2002) and Zanolini and Naspetti (2002) have all indicated that not being available is an important factor for not buying OPFs.

To determine the opinion of the consumers about the availability of the OPFs and its effect on buying/not-buying attitude, below statements are proposed to the respondents through the survey. The statements and the replies are detailed here below:

Statement 29: Generally it's not easy to find organically produced foods everywhere.

Table 5.52 Replies given to the statement "Generally it's not easy to find organically produced foods everywhere" by buyers of OPFs

<b>Replies Given to the Statement "Generally it's not easy to find organically produced foods everywhere" by buyers of OPFs</b>	
<b>Statement 29 For Buyers</b>	<b>Generally, it's not easy to find organically produced foods everywhere</b>
<b>5-Strongly Agree</b>	95
<b>4-Agree</b>	234
<b>3-Don't know</b>	18
<b>2-Disagree</b>	40
<b>1-Totally disagree</b>	3

Table 5.53 Weight of replies given to the statement "Generally it's not easy to find organically produced foods everywhere" by buyers of OPFs

<b>Weight of Replies Given to the Statement “Generally it’s not easy to find organically produced foods everywhere” by Buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	95	475	<b>3.96</b>
4	234	936	
3	18	54	
2	40	80	
1	3	3	
<b>Total</b>	<b>390</b>	<b>1548</b>	

It is observed by the weight of the replies provided for the statement “Generally it’s not easy to find organically produced foods everywhere” by 390 OPF buyer respondents is computed as **3.96**. This result indicated that buyers of OPF mostly do think that it’s not easy to find OPFs everywhere. Hence lack of availability is a deterrent for purchasing OPFs.

Statement 30: If organically produced foods can be found more easily their consumption can be increased.

Table 5.54 Replies given to the statement “If organically produced foods can be found more easily their consumption can be increased” by buyers of OPFs

<b>Replies Given to the Statement “If organically produced foods can be found more easily their consumption can be increased” by Buyers of OPFs</b>	
<b>Statement 30 for buyers</b>	<b>If organically produced foods can be found more easily their consumption can be increased</b>
<b>5-Strongly Agree</b>	169
<b>4-Agree</b>	185
<b>3-Don’t know</b>	26
<b>2-Disagree</b>	11
<b>1-Totally disagree</b>	0

Table 5.55 Weight of replies given to the statement “If organically produced foods can be found more easily their consumption can be increased” by buyers of OPFs

<b>Weight of Replies Given to the Statement “If organically produced foods can be found more easily their consumption can be increased” by Buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	169	845	<b>4.30</b>
4	185	740	
3	26	78	
2	11	22	
1	0	0	
<b>Total</b>	<b>391</b>	<b>1685</b>	

It is observed by the weight of the replies provided for the statement “If organically produced foods can be found more easily their consumption can be increased” by 391 OPFs buyer respondents is computed as **4.30**. This result indicated that buyers of OPF think that availability of OPFs will increase their purchase and consumption and that they are considering lack of availability as a deterrent for purchasing OPFs.

The same matter is asked to non-buyers to determine what their opinion is. The replies are here below:

Statement 30: Organically produced foods are not that much used as it is not easy to obtain them.

Table 5.56 Replies given to the statement “Organically produced foods are not that much used as it is not easy to obtain them” by non-buyers of OPFs

<b>Replies Given to the Statement “Organically produced foods are not that much used as it is not easy to obtain them” by non-buyers of OPFs</b>	
<b>Statement 26 for non-buyers</b>	<b>Organically produced foods are not that much used as it is not easy to obtain them</b>
<b>5-Strongly Agree</b>	30
<b>4-Agree</b>	85
<b>3-Don’t know</b>	12
<b>2-Disagree</b>	20
<b>1-Totally disagree</b>	4

Table 5.57 Weight of the replies given to the statement “Organically produced foods are not that much used as it is not easy to obtain them” by non-buyers of OPFs

<b>Weight of the Replies Given to the Statement “Organically produced foods are not that much used as it is not easy to obtain them” by non-buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	30	150	<b>3.77</b>
4	85	340	
3	12	36	
2	20	40	
1	4	4	
<b>Total</b>	<b>151</b>	<b>570</b>	

It is observed by the weight of the replies provided for the statement “Organically produced foods are not that much used as it is not easy to obtain them” by 151 OPFs non-buyer respondents is computed as **3.77**. This result indicated that non-buyers of OPF also think it’s not easy to find OPFs everywhere. Hence lack of availability is a deterrent for purchasing OPFs.

Statement 27: “If organically produced foods can be obtained more easily, they can be consumed more often”

Table 5.58 Replies given to the statement “If organically produced foods can be obtained more easily, they can be consumed more often” by non-buyers of OPFs

<b>Replies given to the statement “If organically produced foods can be obtained more easily, they can be consumed more often” by non-buyers of OPFs</b>	
<b>Statement 27 For non-buyers</b>	<b>If organically produced foods can be obtained more easily, they can be consumed more often</b>
<b>5-Strongly Agree</b>	34
<b>4-Agree</b>	74
<b>3-Don’t know</b>	23
<b>2-Disagree</b>	16
<b>1-Totally disagree</b>	4

Table 5.59 Weight of replies given to the statement “If organically produced foods can be obtained more easily, they can be consumed more often” by non-buyers of OPFs

<b>Weight of replies given to the statement “If organically produced foods can be obtained more easily, they can be consumed more often” by non-buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	34	170	<b>3.78</b>
4	74	296	
3	23	69	
2	16	32	
1	4	4	
<b>Total</b>	<b>151</b>	<b>571</b>	

It is observed by the weight of the replies provided for the statement “If organically produced foods can be obtained more easily, they can be consumed more often” by 151 OPFs non-buyer respondents is computed as **3.78**. This result indicated that non-buyers of OPF also think lack of availability as a deterrent for purchasing OPFs and that OPFs could be purchased more had they were more available.

### 5.2.2.3. Quality Dissatisfaction

As quality of the OPFs is a reason for their purchase, the opposite statement is proposed to non-buyers of OPFs to determine their perception on the relation between quality and organic products and if quality dissatisfaction about OPFs is a deterrent in their purchase. The replies provided by non-buyers of OPFs are as follows:

Statement 23: Organic products are not of a better quality.

Table 5.60 Replies given to the statement “Organic products are not of a better quality” by non-buyers of OPFs

<b>Replies Given to the Statement “Organic products are not of a better quality” by non-buyers of OPFs</b>	
<b>Statement 23 for non-buyers</b>	<b>Organic products are not of a better quality</b>
<b>5-Strongly Agree</b>	18
<b>4-Agree</b>	32
<b>3-Don’t know</b>	35
<b>2-Disagree</b>	48
<b>1-Totally disagree</b>	18

Table 5.61 Weight of replies given to the statement “Organic products are not of a better quality” by non-buyers of OPFs

<b>Weight of replies given to the statement “Organic products are not of a better quality” by non-buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	18	90	<b>2.89</b>
4	32	128	
3	35	105	
2	48	96	
1	18	18	
<b>Total</b>	<b>151</b>	<b>437</b>	

It is observed by the weight of the replies provided for the statement “Organic products are not of a better quality” by 151 OPFs non-buyer respondents is computed as **2.89**. This result indicated that non-buyers of OPF are not dissatisfied by the quality of OPFs. Therefore quality dissatisfaction is not a deterrent in purchase of OPFs for non-buyers.

Statement 24: Using organic products doesn’t that much affect our life quality in a better way.

Table 5.62 Replies given to the statement “Using organic products doesn’t that much affect our life quality in a better way” by non-buyers of OPFs

<b>Replies given to the statement “Using organic products doesn’t that much affect our life quality in a better way” by non-buyers of OPFs</b>	
<b>Statement 24 for non-buyers</b>	<b>Using organic products doesn’t that much affect our life quality in a better way</b>
<b>5-Strongly Agree</b>	11
<b>4-Agree</b>	30
<b>3-Don’t know</b>	37
<b>2-Disagree</b>	56
<b>1-Totally disagree</b>	17

Table 5.63 Weight of replies given to the statement “Using organic products doesn’t that much affect our life quality in a better way” by non-buyers of OPFs

<b>Weight of replies given to the statement “Using organic products doesn’t that much affect our life quality in a better way” by non-buyers of OPFs</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	11	55	<b>2.74</b>
4	30	120	
3	37	111	
2	56	112	
1	17	17	
<b>Total</b>	<b>151</b>	<b>415</b>	

It is observed by the weight of the replies provided for the statement “Using organic products doesn’t that much affect our life quality in a better way” by 151 OPFs non-buyer respondents is computed as **2.74**. This result indicated that non-buyers of OPF do also think that OPFs are affecting their life quality in a better way, hence they are declaring that they are not dissatisfied with the quality of OPFs. Therefore this result indicates that quality dissatisfaction is not a deterrent for non-buyers of OPFs.

#### **5.2.2.4. Lack of Trusting in Certification**

Lack of trusting in certification/ organic labeling process, or in other words lack of reliability to the authenticity of the OPF is pointed out as another deterrent by researchers (Ott, 1990; Canavari et al., 2002; Aarset et al., 2004).

The survey conducted for this thesis contained a statement about the reliability of organic labeling asked “only” to OPFs buyers and replied by 392 respondents. The replies provided by the respondents to this statement indicate that even OPFs buyers do not totally trust in labeling system. This result means that certification processes are not trusted either among OPF users.



Statement 27 proposed to buyers: Products bearing organic label can be trusted to be really organic.

Table 5.64 Distribution of OPF buyer respondents to the statement proposed as “Products bearing organic label can be trusted to be really organic”

<b>Distribution of OPF Buyer Respondents to the Statement Proposed as “Products bearing organic label can be trusted to be really organic”</b>	
<b>Statement 27 for buyers</b>	<b>Products bearing organic label can be trusted to be really organic</b>
<b>5-Strongly Agree</b>	10
<b>4-Agree</b>	59
<b>3-Don’t know</b>	186
<b>2-Disagree</b>	110
<b>1-Totally disagree</b>	27

Table 5.65 Weight of OPF buyer respondents’ replies to the statement proposed as “Products bearing organic label can be trusted to be really organic”

<b>Weight of OPF Buyer Respondents’ Replies to the Statement “Products bearing organic label can be trusted to be really organic”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	10	50	<b>2.78</b>
4	59	236	
3	186	558	
2	110	220	
1	27	27	
<b>Total</b>	<b>392</b>	<b>1091</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of the buyers of OPF on the reliability of labels of OPFs is computed as **2.78**. This result obtained through the survey replied by 392 OPF buyers indicates that even OPF buyers do not trust that each product having organic food label is truly a OPF.

To determine the opinion of non-buyers, the survey proposed a similar statement to the non-buyers of OPF. The replies given to that question are provided here below:

Statement 33: Certification of organically produced products is not reliable hundred per cent.

Table 5.66 Distribution of replies provided by non-buyers of OPF to the statement “Certification of organically produced products is not reliable hundred per cent”

<b>Replies Provided by Non-Buyers of OPF to the Statement “Certification of organically produced products is not reliable hundred per cent”</b>	
<b>Statement 33 for non-buyers</b>	<b>Certification of organically produced products is not reliable hundred per cent</b>
<b>5-Strongly Agree</b>	53
<b>4-Agree</b>	57
<b>3-Don’t know</b>	35
<b>2-Disagree</b>	5
<b>1-Totally disagree</b>	0

Table 5.67 Weight of the replies provided by non-buyers of OPF to the statement “Certification of organically produced products is not reliable hundred per cent”

<b>Weight of the Replies Provided by Non-Buyers of OPF to the Statement “Certification of organically produced products is not reliable hundred per cent”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	53	265	<b>4.05</b>
4	57	228	
3	32	105	
2	5	10	
1	0	0	
<b>Total</b>	<b>150</b>	<b>608</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of non-buyers of OPF on the reliability of labels of OPFs is computed as **4.05**. This result obtained through the survey replied by 150 OPF non-buyers indicates that non-buyers think that certification of OPFs is not reliable

hundred per cent. This result can be assessed as one of the reasons for not buying OPFs.

For the aim of this thesis, to see if the reliability to the certification process can be increased affecting the purchase and accordingly consumption of OPFs, the statement “Implementation of a hundred per cent reliable control system for the certification of organically produced products - such as an application for cell-phones enabling instant check - can increase their consumption” is asked to both groups of respondents of the survey.

Non-buyers and Buyers of OPF have replied to the statements as follows:

Statement 35 : Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption.

Table 5.68 Distribution of replies provided by buyers of OPF to the question “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption”

<b>Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption</b>	
<b>Statement 35 for buyers</b>	<b>Implementation of a hundred per cent reliable control system for the certification of organically produced products - such as an application for cell-phones enabling instant check - can increase their consumption</b>
<b>5-Strongly Agree</b>	195
<b>4-Agree</b>	153
<b>3-Don't know</b>	34
<b>2-Disagree</b>	9
<b>1-Totally disagree</b>	1

Table 5.69 Weight of replies provided by buyers of OPF to the question “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption”

<b>Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	195	975	<b>4.35</b>
4	153	612	
3	34	102	
2	9	18	
1	1	1	
<b>Total</b>	<b>392</b>	<b>1708</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of the buyers of OPF concerning implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- to increase the consumption of OPFs by increasing the reliability, is computed as **4.35**. This result obtained through the survey replied by 392 OPF buyers indicates that they think a hundred per cent reliable control system can increase the purchase of OPFs.

The same statement is proposed to non-buyer respondents too.

Statement 35: Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption.

Table 5.70 Distribution of replies provided by non-buyers of OPF to the question “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption”

<b>Distribution of replies provided by non-buyers to the question “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption”</b>	
<b>Statement 35 for non-buyers</b>	<b>Implementation of a hundred per cent reliable control system for the certification of organically produced products - such as an application for cell- phones enabling instant check - can increase their consumption</b>
<b>5-Strongly Agree</b>	42
<b>4-Agree</b>	74
<b>3-Don’t know</b>	25
<b>2-Disagree</b>	5
<b>1-Totally disagree</b>	4

Table 5.71 Weight of replies provided by non-buyers of OPF to the question “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption”

<b>Weight of the replies provided by non-buyers to the question “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- can increase their consumption”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	42	210	<b>3.96</b>
4	74	296	
3	25	75	
2	5	10	
1	4	4	
<b>Total</b>	<b>150</b>	<b>595</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of non- buyers of OPF concerning implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell phones enabling instant check- to increase the

consumption of OPFs by increasing the reliability, is computed as **3.96**. This result obtained through the survey replied by 150 non-buyers of OPF indicates that non-buyers of OPF also do think that a hundred per cent reliable control system can increase the purchase of OPFs.

To observe the opinion of non-buyers of OPFs on reliability of the authenticity of OPFs, another statement is proposed as follow;

Statement 39: Consumers can easily be cheated while purchasing organically produced products.

Table 5.72 Distribution of the replies given to the statement “Consumers can easily be cheated while purchasing organically produced products”

<b>Distribution of the replies given to the question “Consumers can easily be cheated while purchasing organically produced products”.</b>	
<b>Statement 39 for non-buyers</b>	<b>Consumers can easily be cheated while purchasing organically produced products”.</b>
<b>5-Strongly Agree</b>	80
<b>4-Agree</b>	55
<b>3-Don’t know</b>	9
<b>2-Disagree</b>	4
<b>1-Totally disagree</b>	3

Table 5.73 Weight of the replies given to the statement “Consumers can easily be cheated while purchasing organically produced foods”

<b>Weight of the replies given to the question “Consumers can easily be cheated while purchasing organically produced foods”.</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	80	400	<b>4.35</b>
4	55	220	
3	9	27	
2	4	8	
1	3	3	
<b>Total</b>	<b>151</b>	<b>658</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of the non-buyers of OPF on the reliability of OPFs is computed as **4.35**. This result obtained through the survey replied by 151 OPF non-buyers indicates that non-buyers do believe that consumers do not feel any reliability towards the authenticity of OPFs.

These outcomes can be interpreted as both buyers and non-buyers of OPFs do not trust to the reliability of OPF authenticity and they experience the lack of trust towards the certification process of OPFs. Buyers of OPFs shall feel safe on this matter if a remote control system is implemented. On the other hand the replies provided by non-buyers of OPF show that their trust on a remote control system shall not increase their trust as much as expected.

#### **5.2.2.5. Lack of Knowledge about Its Benefits**

Consumers' lack of knowledge about the benefits of OPFs, to be unaware of latest developments and findings in OPFs domain have been determined as a factor preventing them to purchase or demand for OPFs (Hill and Lynchehaun, 2002; Magistris and Garcia, 2008; Diaz, Pleite and Paz, 2012; Roitner-Schobesberger et al, 2008; Pieniak, Aertsens and Verbeke, 2010; Aschemann-Witzel, 2014; Demeritt, 2002). Chryssochoidis, (2000) also states late introduction of OPFs as a deterrent, which is reflecting on consumers as a lack of knowledge.

Aiming by this thesis to determine what are the opinions of consumers on the subject of the effects of lack of knowledge regarding OPFs, respondents were proposed below statements. The statements and their replies are as follows:

Statement 33: Developments about organic products are not well explained/presented to the consumers.

Table 5.74 Distribution of replies provided by buyers of OPF to the statement “Developments about organic products are not well explained/presented to the consumers.”

<b>Distribution of the Replies Provided by Buyers of OPF for the Statement “Developments about organic products are not well explained/presented to the consumers.”</b>	
<b>Statement 33 for buyers</b>	<b>Developments about organic products are not well explained/presented to the consumers.</b>
<b>5-Strongly Agree</b>	166
<b>4-Agree</b>	195
<b>3-Don’t know</b>	24
<b>2-Disagree</b>	5
<b>1-Totally disagree</b>	1

Table 5.75 Weight of replies provided by buyers of OPF to the statement “Developments about organic products are not well explained/presented to the consumers.”

<b>Weight of the replies provided by buyers of OPF for the statement “Developments about organic products are not well explained/presented to the consumers”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	166	830	<b>4.32</b>
<b>4</b>	195	780	
<b>3</b>	24	72	
<b>2</b>	5	10	
<b>1</b>	1	1	
<b>Total</b>	<b>391</b>	<b>1693</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of the buyers of OPF on being properly informed about the developments on OPFs is computed as **4.32**. This result obtained through the survey replied by 391 OPF buyers indicates that consumers thinks that developments on OPFs are not properly presented.



Statement 34: Better presentation of the developments and profits of organic products can ensure their more frequent use.

Table 5.76 Distribution of replies provided by buyers of OPF to the statement “Better presentation of the developments and profits of organic products can ensure their more frequent use.”

<b>Distribution of the replies provided by buyers of OPF for the statement “Better presentation of the developments and profits of organic products can ensure their more frequent use.”</b>	
<b>Statement 34 for buyers</b>	<b>Better presentation of the developments and profits of organic products can ensure their more frequent use.</b>
<b>5-Strongly Agree</b>	160
<b>4-Agree</b>	205
<b>3-Don’t know</b>	22
<b>2-Disagree</b>	5
<b>1-Totally disagree</b>	0

Table 5.77 Weight of replies provided by buyers of OPF to the statement proposed as “Better presentation of the developments and profits of organic products can ensure their more frequent use.”

<b>Weight of the replies provided by buyers of OPF for the question “Better presentation of the developments and profits of organic products can ensure their more frequent use”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	160	800	<b>4.32</b>
4	205	820	
3	22	66	
2	5	10	
1	0	0	
<b>Total</b>	<b>392</b>	<b>1696</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of the buyers of OPF on the effect on their purchase attitude and behavior, of being a better presentation of the developments and profits of OPFs and its consequent results is computed as **4.32**. This result obtained through the survey replied by 392 OPF buyers indicates that better presentation, increasing knowledge level of consumers on OPFs shall have a positive effect on their purchase attitude and behavior on OPFs.

Statement 31 : “Organic products are not frequently used because their benefits are not told properly to the consumers” as follows:

Table 5.78 Distribution of replies provided by non-buyers of OPF to the statement “Organic products are not frequently used because their benefits are not told properly to the consumers.”

<b>Distribution of the replies provided by non-buyers of OPF for the statement “Organic products are not frequently used because their benefits are not told properly to the consumers.”</b>	
<b>Statement 31 for non-buyers</b>	<b>Organic products are not frequently used because their benefits are not told properly to the consumers.</b>
<b>5-Strongly Agree</b>	18
<b>4-Agree</b>	50
<b>3-Don’t know</b>	38
<b>2-Disagree</b>	39
<b>1-Totally disagree</b>	6

Table 5.79 Weight of replies provided by non-buyers of OPF to the statement “Organic products are not frequently used because their benefits are not told properly to the consumers”

<b>Weight of the replies provided by non-buyers of OPF for the statement “Organic products are not frequently used because their benefits are not told properly to the consumers”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	18	90	<b>3.23</b>
4	50	200	
3	38	114	
2	39	78	
1	6	6	
<b>Total</b>	<b>151</b>	<b>488</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of the non-buyers of OPF on being properly informed about the benefits of OPFs and its consequent result on their purchase behavior is computed as **3.23**. This result obtained through the survey replied by 151 OPF non-buyers indicates that non-buyers do think that being informed about OPFs’ benefits, doesn’t affect that much their purchase behavior.

Non-buyers of OPFs replied to

Statement 32 “Organic products can be used more if more advertisements are made about them” as follows:

Table 5.80 Distribution of replies provided by non-buyers of OPF to the statement “Organic products can be used more if more advertisements are made about them”

<b>Distribution of the replies provided by non-buyers of OPF for the statement “Organic products can be used more if more advertisements are made about them.”</b>	
<b>Statement 32 for non-buyers</b>	<b>Organic products can be used more if more advertisements are made about them.</b>
<b>5-Strongly Agree</b>	16
<b>4-Agree</b>	41
<b>3-Don’t know</b>	46
<b>2-Disagree</b>	42
<b>1-Totally disagree</b>	6

Table 5.81 Weight of replies provided by non-buyers of OPF to the statement “Organic products can be used more if more advertisements are made about them”

<b>Weight of the replies provided by non-buyers of OPF for the question “Organic products can be used more if more advertisements are made about them.”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	16	80	<b>3.12</b>
4	41	164	
3	46	138	
2	42	84	
1	6	6	
<b>Total</b>	<b>151</b>	<b>472</b>	

As observed, the weight of the replies given to the above statement proposed to determine the opinion of the non-buyers of OPF on being probably positively affected by advertisements on OPFs and its consequent result on their use is computed as **3.12**. This result obtained through the survey replied by 151 OPF non-buyers indicates that non-buyers do think that advertisements on OPFs, shall not affect that much their purchase behavior.

### 5.2.2.6. Cosmetic Concerns

Surveys conducted since decades (Ott, 1990; Thompson and Kidwell, 1998) have indicated another reason which is named as “cosmetic concern” that deters consumers to purchase OPFs. The appearance of OPFs having blemishes, the existence of worms, the imperfection in their shapes are called as cosmetic defects and the deterrent is called as cosmetic concerns. Consumers who are used to have bright, shiny, perfectly shaped fruits and vegetables, containing no worms or other bugs, cleaned from dirt or other substances, think that OPFs with blemishes or insect damages, or not looking perfectly shaped, do not worth to pay a price higher than they pay for conventionally produced ones.

To test the perception about cosmetic concerns of consumers, the survey proposed the same statement to both parties, as buyers and non-buyers of OPF.

The replies are as follows:

Statement 36: “Ensuring a better look for organic agriculture products as good as non-organic ones, can increase their purchase”.

Table 5.82 Distribution of replies provided by buyers of OPF to the statement “Ensuring a better look for organic agriculture products as good as non-organic ones, can increase their purchase”

<b>Distribution of the replies provided by buyers of OPF for the statement “Ensuring a better look for organically produced foods as good as non-organic ones can increase their purchase”</b>	
<b>Statement 36 for buyers</b>	<b>Ensuring a better look for organically produced products as good as non-organic ones, can increase their purchase.</b>
<b>5-Strongly Agree</b>	43
<b>4-Agree</b>	116
<b>3-Don’t know</b>	97
<b>2-Disagree</b>	113
<b>1-Totally disagree</b>	23

Table 5.83 Weight of replies provided by buyers of OPF to the statement “Ensuring a better look for organic agriculture products as good as non-organic ones, can increase their purchase”

<b>Weight of the replies provided by buyers of OPF for the statement “Ensuring a better look for organically produced foods as good as non-organic ones can increase their purchase”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	43	215	<b>3.10</b>
4	116	464	
3	97	291	
2	113	226	
1	23	23	
<b>Total</b>	<b>392</b>	<b>1219</b>	

As observed, the weight of the replies given to the above statement proposed to determine the perception of the buyers of OPF on cosmetic concerns is computed as **3.10**. This result obtained through the survey replied by 392 OPF buyers indicated that they are not seeing cosmetic defects of the food they purchase as a matter of concern.

Statement 36: Ensuring a better look for organically produced foods as good as non-organic ones, can increase their purchase.

Table 5.84 Distribution of replies provided by non-buyers of OPF to the statement “Ensuring a better look for organically produced foods as good as non-organic ones, can increase their purchase”.

<b>Distribution of the replies provided by non-buyers of OPF for the statement “Ensuring a better look for organically produced foods as good as non-organic ones can increase their purchase”.</b>	
<b>Statement 36 for non-buyers</b>	<b>Ensuring a better look for organically produced foods as good as non-organic ones, can increase their purchase.</b>
<b>5-Strongly Agree</b>	8
<b>4-Agree</b>	46
<b>3-Don’t know</b>	40
<b>2-Disagree</b>	49
<b>1-Totally disagree</b>	8

Table 5.85 Weight of replies provided by non-buyers of OPF to the statement “Ensuring a better look for organically produced foods as good as non-organic ones, can increase their purchase”.

<b>Weight of the replies provided by non-buyers of OPF for the statement “Ensuring a better look for organically produced foods as good as non-organic ones can increase their purchase”.</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	8	40	<b>2.98</b>
4	46	184	
3	40	120	
2	49	98	
1	8	8	
<b>Total</b>	<b>151</b>	<b>450</b>	

As observed, the weight of the replies given to the above statement proposed to determine the perception of non-buyers of OPF on cosmetic concerns is computed as **2.98**. Accordingly, the survey conducted on 151 non-buyers of OPF indicated that they are not seeing cosmetic defects of the food they purchase as a matter of concern either.

### **5.3. Consumers’ Awareness on Organically Produced Foods**

Consumer’s awareness is crucial as it is the factor affecting their purchase behaviors. Studies conducted previously on consumers’ awareness and on their knowledge about organic foods, found out that although there is a general global knowledge about organic foods, in fact consumers have different and sometimes inconsistent ideas even in the same country, about what is organically produced food (Yiridoe et al., 2005).

It is clear that consumers awareness about OPFs shall affect organic product markets. Awareness is the main reason which is transforming consumers positive attitude towards OPFs into purchase. Therefore increased awareness of the consumers shall increase their demand for OPFs.

This thesis aimed to determine, among other matters, whether the consumers, are aware or not about the differences between organic and non-organic food. Yiridoe et al. (2005) indicated that consumers’ awareness and knowledge on OPFs affect consumers’ willingness to pay a price premium. Consumers who cannot understand the difference between organic and non-organic products shall not be

willing to pay more for OPFs and shall prefer buying conventional ones. Unawareness shall also result in buying cheaper CPFs.

Jolly et al. (1989) indicated on their survey conducted in three counties of California that consumers perceive OPF as food produced not using artificial fertilizers, growth hormones, pesticides and not containing any residues.

Hill and Lynchehaun (2002), stated that consumers in the UK were thinking that when compared to CPF, OPF is healthy and more natural.

A survey conducted by Dutch survey company TNS in 2004, comprising 4.000 households, revealed that 52% of the consumers were only looking for the word “organic” on the products label to differentiate it from conventional food.

The same situation is indicated also by Øystein et al. (2001) and Wessels et al. (1999). Studies conducted on this subject revealed that consumers’ OPF purchasing decisions are associated with organic labels. Therefore, organic labels that are inaccurate can cause prospective OPF buyers to have wrong ideas.

Giannakas (2002) stated that consumers of Western civilizations are more skeptical when it comes to labels in organic product sector.

Yiridoe et al. (2005) indicated that consumers’ awareness and knowledge on organic products affect consumers’ willingness to pay a price premium. Consumers who cannot understand the difference between organic and non-organic products shall not be willing to pay more for organic products and shall prefer buying conventional ones. Unawareness shall also result in buying cheaper conventionally produced products.

Accordingly, aiming to determine the awareness of consumers about organic products, three statements are proposed both to OPF buyers and non-buyers. The statements and the replies provided as per Likert Scale by respondents can be analyzed as below;

Statement 1: I can easily understand the difference between an organic and non-organic product.

This statement is replied by OPF buyer respondents as below:

Table 5.86 Distribution of the replies provided by buyers for the statement “I can easily understand the difference between an organic and non-organic product”.

<b>I can easily understand the difference between an organic and non-organic food</b>	
<b>Statement 14 For buyers</b>	<b>I can easily understand the difference between an organic and non-organic food.</b>
<b>5-Strongly Agree</b>	44
<b>4-Agree</b>	126
<b>3-Don't know</b>	164
<b>2-Disagree</b>	48
<b>1-Totally disagree</b>	9

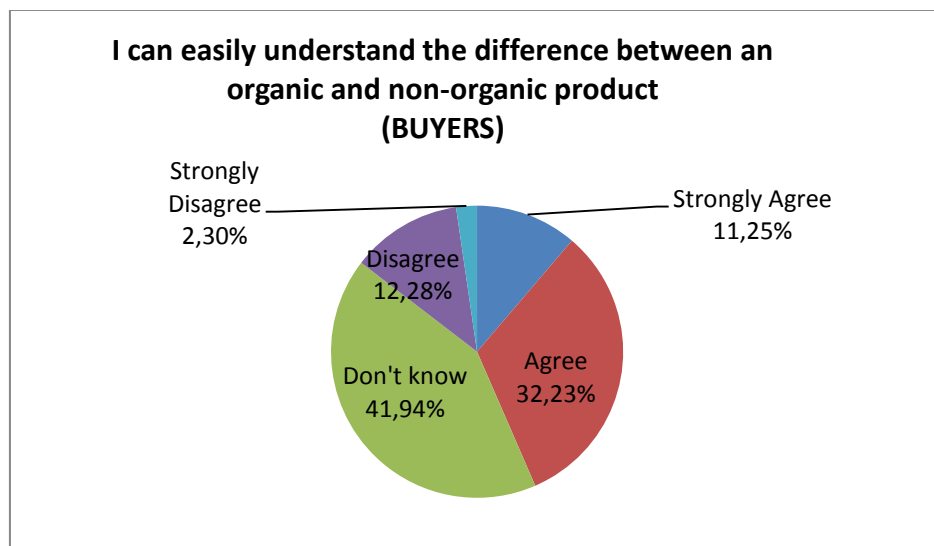


Figure 5.8 Distribution of the replies provided by buyers for the statement “I can easily understand the difference between an organic and non-organic product”.



Table 5.87 Distribution of the replies provided by buyers for the statement “I can easily understand the difference between an organic and non-organic product”.

<b>I can easily understand the difference between an organic and non-organic food</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
<b>5</b>	44	220	<b>3.37</b>
<b>4</b>	126	504	
<b>3</b>	164	492	
<b>2</b>	48	96	
<b>1</b>	9	9	
<b>Total</b>	<b>391</b>	<b>1321</b>	

Weight of the replies provided by OPF buyers for the statement “I can easily understand the difference between an organic and non-organic product” is computed as 3,37. This outcome indicates that OPF buyer consumers cannot understand easily the difference between an organic and non-organic product.

The same statement is proposed to non-buyer consumers also. Their replies are as below:

Table 5.88 Distribution of the replies provided by non-buyers for the statement “I can easily understand the difference between an organic and non-organic product”.

<b>I can easily understand the difference between an organic and non-organic food</b>	
<b>Statement 12 for non-buyers</b>	<b>I can easily understand the difference between an organic and non-organic food</b>
<b>5-Strongly Agree</b>	28
<b>4-Agree</b>	31
<b>3-Don't know</b>	55
<b>2-Disagree</b>	26
<b>1-Totally disagree</b>	11

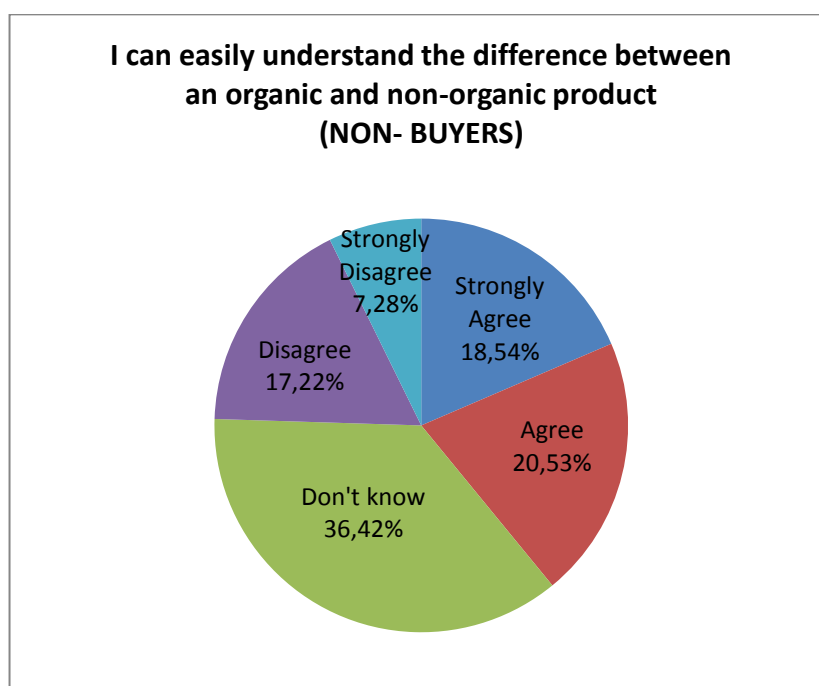


Figure 5.9 Distribution of the replies provided by non-buyers for the statement “I can easily understand the difference between an organic and non-organic product”.

Table 5.89 Distribution of the replies provided by non-buyers for the statement “I can easily understand the difference between an organic and non-organic product”.

<b>Distribution of the replies provided by non-buyers for the statement “I can easily understand the difference between an organic and non-organic product”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	28	140	<b>3.25</b>
4	31	124	
3	55	165	
2	26	52	
1	11	11	
<b>Total</b>	<b>151</b>	<b>492</b>	

Weight of the replies provided by non-buyers of OPF for the statement proposed as “I can easily understand the difference between an organic and non-organic product” is computed as **3.25**. This outcome indicates that non-buyers of

OPF cannot inarguably understand easily the difference between an organic and non-organic product.

Statement 2: I know what standards / specifications are needed for a product to be organic.

This statement is replied by OPF buyer respondents as below:

Table 5.90 Distribution of the replies provided by buyers for the statement “I know what standards/specifications are needed for a product to be organic”.

<b>Distribution of the replies provided by buyers for the statement “I know what standards/specifications are needed for a product to be organic</b>	
<b>Statement 15 for Buyers</b>	<b>I know what standards / specifications are needed for a product to be organic</b>
<b>5-Strongly Agree</b>	56
<b>4-Agree</b>	192
<b>3-Don’t know</b>	115
<b>2-Disagree</b>	24
<b>1-Totally disagree</b>	6

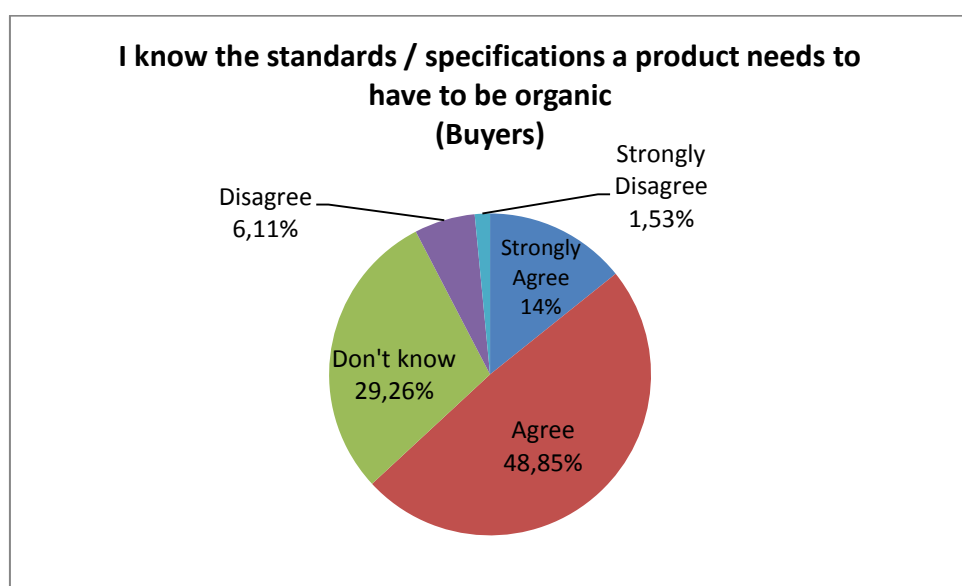


Figure 5.10 Distribution of the replies provided by buyers for the statement “I know what standards/specifications are needed for a product to be organic”

Table 5.91 Weight of the replies provided by buyers for the statement “I know what standards/specifications are needed for a product to be organic”

<b>Weight of the replies provided by buyers for the statement “I know what standards/specifications are needed for a product to be organic”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	56	280	<b>3.68</b>
4	192	768	
3	115	345	
2	24	48	
1	6	6	
<b>Total</b>	<b>393</b>	<b>1447</b>	

Weight of the replies provided by OPF buyers for the statement “I know what standards/specifications are needed for a product to be organic” is computed as 3.68. This outcome indicates that OPF buyer consumers are aware about the standards and specifications needed for a product to be organic.

The same statement is proposed to non-buyer consumers also. Their replies are as below:

Table 5.92 Distribution of the replies provided by non-buyers for the statement “I know what standards/specifications are needed for a product to be organic”

<b>Statement 13 For Non-Buyers</b>	<b>Distribution of the replies provided by non-buyers for the statement “I know what standards/specifications are needed for a product to be organic”</b>
<b>5-Strongly Agree</b>	28
<b>4-Agree</b>	31
<b>3-Don’t know</b>	55
<b>2-Disagree</b>	26
<b>1-Totally disagree</b>	11

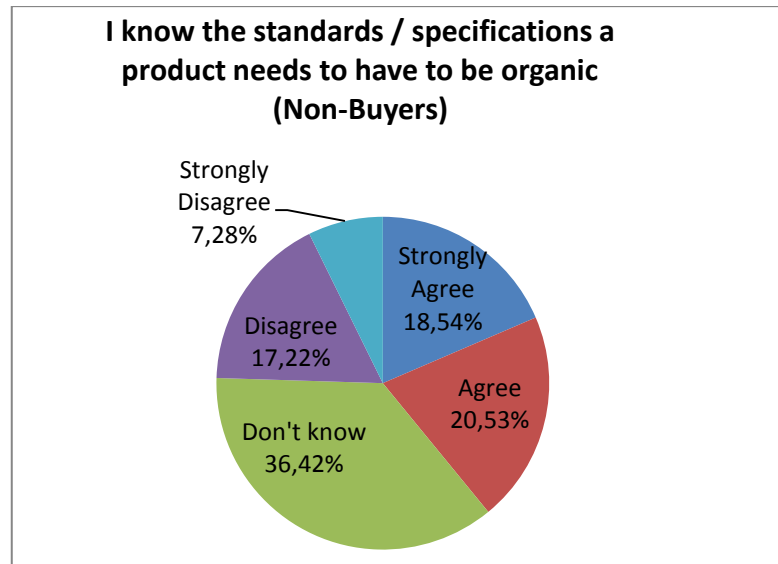


Figure 5.11 Distribution of the replies provided by non-buyers for the statement “I know what standards/specifications are needed for a product to be organic”

Table 5.93 Weight of the replies provided by non-buyers for the statement “I know what standards/specifications are needed for a product to be organic”

<b>Weight of the replies provided by non-buyers for the statement “I know what standards/specifications are needed for a product to be organic”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	28	140	<b>3.25</b>
4	31	124	
3	55	165	
2	26	52	
1	11	11	
<b>Total</b>	<b>151</b>	<b>492</b>	

Weight of the replies provided by non-buyers of OPF for the statement “I know what standards/specifications are needed for a product to be organic” is computed as 3.25. This outcome indicates that non-buyers of OPF are not aware about the standards and specifications needed for a product to be organic.

Statement 3: Foods produced in the villages are organic anyway.

Table 5.94 Distribution of the replies provided by buyers for the statement “Foods produced in the villages are organic anyway”.

<b>Distribution of the replies provided by buyers for the statement “Foods produced in the villages are organic anyway”</b>	
<b>Statement 16 for buyers</b>	<b>Foods produced in the villages are organic anyway</b>
<b>5-Strongly Agree</b>	9
<b>4-Agree</b>	33
<b>3-Don’t know</b>	81
<b>2-Disagree</b>	192
<b>1-Totally disagree</b>	74

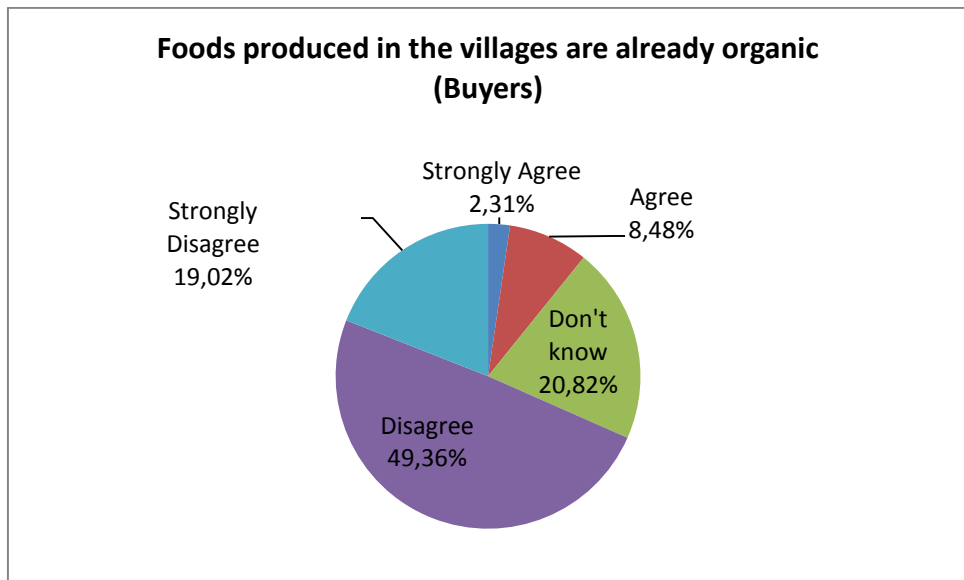


Figure 5.12 Distribution of the replies provided by buyers for the statement “Foods produced in the villages are organic anyway”.

Table 5.95 Weight of the replies provided by buyers for the statement “Foods produced in the villages are organic anyway”.

<b>Weight of the replies provided by buyers for the statement “Foods produced in the villages are organic anyway”</b>			
<b>Likert Scale</b>	<b>Frequency</b>	<b>Overall Score</b>	<b>Weight</b>
5	9	45	<b>2.25</b>
4	33	132	
3	81	243	
2	192	384	
1	74	74	
<b>Total</b>	<b>389</b>	<b>878</b>	

Weight of the replies provided by OPF buyers for the statement “Foods produced in the villages are organic anyway” is computed as 2.25. This outcome indicates that OPF buyer consumers are aware that food produced in the villages are not necessarily organic.

The same statement is proposed to non-buyer consumers also. Their replies are as below:

Table 5.96 Distribution of the replies provided by non-buyers for the statement “Foods produced in the villages are organic anyway”.

<b>Distribution of the replies provided by buyers for the statement “Foods produced in the villages are organic anyway”</b>	
<b>Statement 14 For Non-Buyers</b>	<b>Foods produced in the villages are organic anyway</b>
<b>5-Strongly Agree</b>	5
<b>4-Agree</b>	9
<b>3-Don't know</b>	27
<b>2-Disagree</b>	67
<b>1-Totally disagree</b>	42

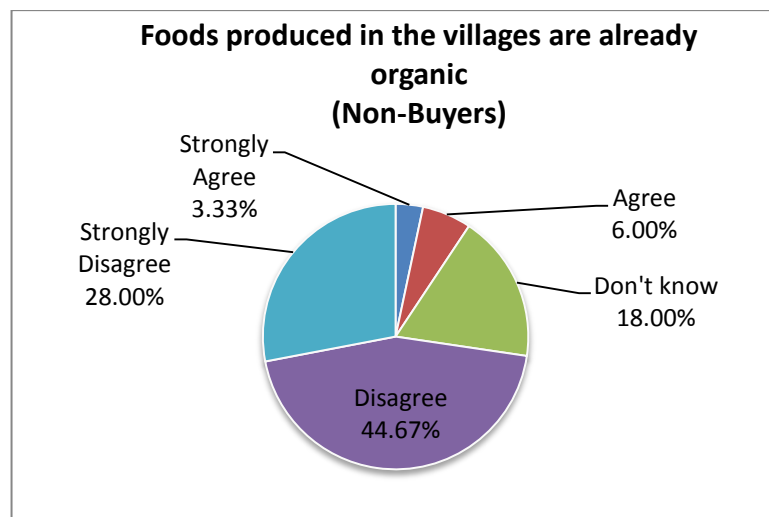


Figure 5.13 Distribution of replies provided by non-buyers of OPFs for the statement “Foods produced in the villages are already organic”

Table 5.97 Weight of the replies provided by non-buyers for the statement “Foods produced in the villages are organic anyway”

Weight of the replies provided by non-buyers for the statement “Foods produced in the villages are organic anyway”			
Likert Scale	Frequency	Overall Score	Weight
5	5	25	<b>2.12</b>
4	9	36	
3	27	81	
2	67	134	
1	42	42	
<b>Total</b>	<b>150</b>	<b>318</b>	

Weight of the replies provided by non-buyers of OPF for the statement “Foods produced in the villages are organic anyway” is computed as 2.12. This outcome indicates that non-buyers of OPF are also aware that foods produced in the villages are not necessarily organic.



## **CHAPTER SIX**

### **6. TESTING THE HYPOTHESIS BASED ON SURVEY RESPONDENTS' REPLIES**

After having determined the demographic details of the respondents and gathered relevant data from respondents of the survey, hypothesis on Consumers' Demographic Aspects are tested using chi-square test.

#### **H.1. Females Are More Inclined to Purchase Organic Food**

Studies conducted since more than two decades now, provided some clues about the demographic aspects of the consumers when it comes to organically produced food purchase. Wandel and Bugge (1997), Davies et al. (1995) and Lea and Worsley (2005) stated that the interest towards organically produced food is higher than men in women consumers. These studies also stated that women's attitude towards organically produced food is more positive than men also. Davies et al. (1995) also pointed out that women between 30-45 years old, with a considerably higher income and who are having children are more inclined to purchase organic foods. Onyango et al. (2006) indicated that organically produced foods are purchased on regular basis by females and young people. And finally, although this one can be due to the "who is making the food shopping for the house" fact, men do not

purchase organically produced food as often as women. Therefore gender factor on organically produced food purchase is tested.

Out of 543 respondents of the survey; 283 are women, making a percentage of 52% and 260 are men making a percentage of 48%. Out of 283 women who replied to the survey questions, 204 declared that they use organic products and 79 declared that they are not using organic products. On the other hand, 188 male respondents declared that they are using organic products while 72 male respondents declared that they are not organic product users.

Table 6.1 Distribution of the organically produced foods buyers and non-buyers as per gender

<b>Distribution of the organically produced foods buyers and non-buyers as per gender</b>			
<b>Gender</b>	<b>Buyer</b>	<b>Non-Buyer</b>	<b>Total</b>
<b>Female</b>	204	79	<b>283</b>
<b>Male</b>	188	72	<b>260</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

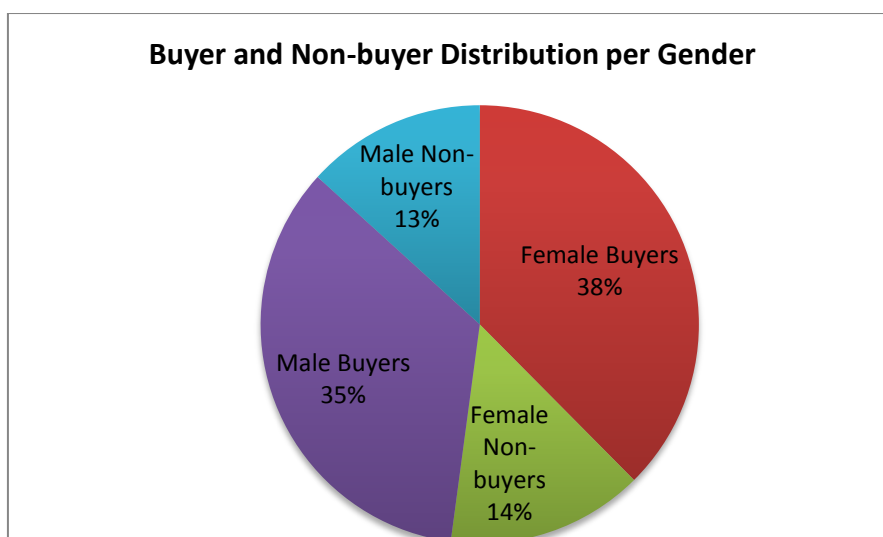


Figure 6.1 Buyer and Non-buyer distribution per gender

The data obtained by the survey provided that the percentages of female and male organic product buyers are very close to each other.

Hypothesis  $H_{1_1}$  is “Females are more inclined to purchase organic food”. Consequently hypothesis null  $H_{1_0}$  is “Females are not more inclined to purchase organic food”.

To test the accuracy of the hypothesis  $H_{1_1}$  “Females are more inclined to purchase organic food. Chi-square test is implemented.

Obtained data are :

Table 6.2 Obtained Data on Gender

<b>Obtained Data on Gender</b>			
<b>Gender</b>	<b>Buyer</b>	<b>Non-buyer</b>	<b>Total</b>
<b>Female</b>	204	79	<b>283</b>
<b>Male</b>	188	72	<b>260</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

Expected data are:

Table 6.3 Expected Data on Gender

<b>Expected Data on Gender</b>			
<b>Gender</b>	<b>Buyer</b>	<b>Non-buyer</b>	<b>Total</b>
<b>Female</b>	204.30	78.70	<b>283</b>
<b>Male</b>	187.70	72.30	<b>260</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

From above data we compute:

$$x^2h = 0.003353 \text{ and } x^2 = 3.84$$

**Consequently :  $x^2 > x^2h$**

Based on above data  $x^2h$  is computed as 0.0033 and  $x^2$  is computed as 3.84.

As  $x^2h < x^2$  then Hypothesis  $H_0$  is accepted, rejecting hypothesis  $H_{1_1}$ .

Hypothesis  $H_{1_1}$  being “Females are more inclined to purchase organic food” and null hypothesis  $H_{1_0}$  is “Females are not more inclined to purchase organic food”; the result of chi-square test implemented on the replies of the survey’s respondents is accepting  $H_{1_0}$  “Females are not more inclined to purchase organic food”, rejecting the hypothesis  $H_{1_1}$  “Females are more inclined to purchase organic food”.

This result is different than the most studies reviewed in the literature. Taking into consideration the years the studies have been conducted, this outcome can be interpreted as that with the years passing by the perception of men on OPFs has changed positively, reflecting on their OPFs purchasing attitudes and behaviors. A survey conducted by Eti İçli et al. (2016) also indicated that there is no difference between women and men in OPF purchase preferences.

## **H.2. Consumers with Higher Education Level Are More Inclined To Purchase Organic Food**

Previously conducted studies indicated that education level is a factor that is affecting organically produced foods purchase behavior. Dettmann and Dimitri (2007) stated that consumers who had an education in higher levels are more inclined to purchase and consumer organically produced foods when compared to consumers who had an education not as high as them. On the other hand Yin et al. (2010) indicated that education level has no significant effect on organically produced foods purchase behavior. Paul and Rana (2012) conducted a survey and indicated that the test they have performed on the results shows positive effect of higher education on organically produced foods purchase. Therefore this thesis tested the influential factor of education on consumers' OPFs purchasing behavior.

When education level of the respondents is evaluated by its distribution on users and non-users of organic food, we see below breakdowns:

Table 6.4 Distribution of Education Level of Respondents

<b>Distribution of Education Level of Respondents</b>			
<b>Educational Level</b>	<b>Users</b>	<b>Non-users</b>	<b>Total</b>
<b>Secondary</b>	3	3	6
<b>High School</b>	26	11	37
<b>University</b>	215	80	295
<b>Master</b>	96	41	137
<b>PhD</b>	52	16	68
<b>TOTAL</b>	<b>392</b>	<b>151</b>	<b>543</b>

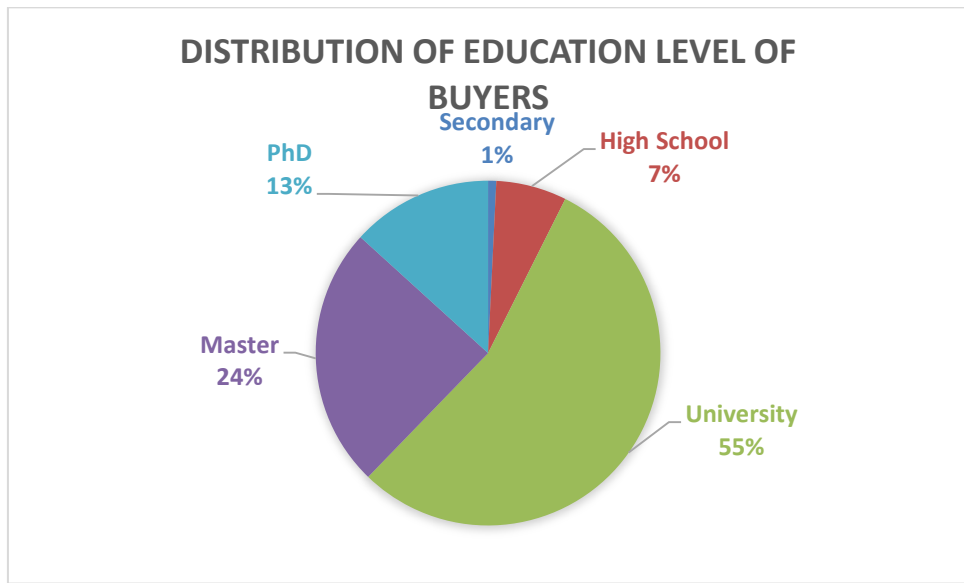


Figure 6.2 Distribution of Education Level of Buyers

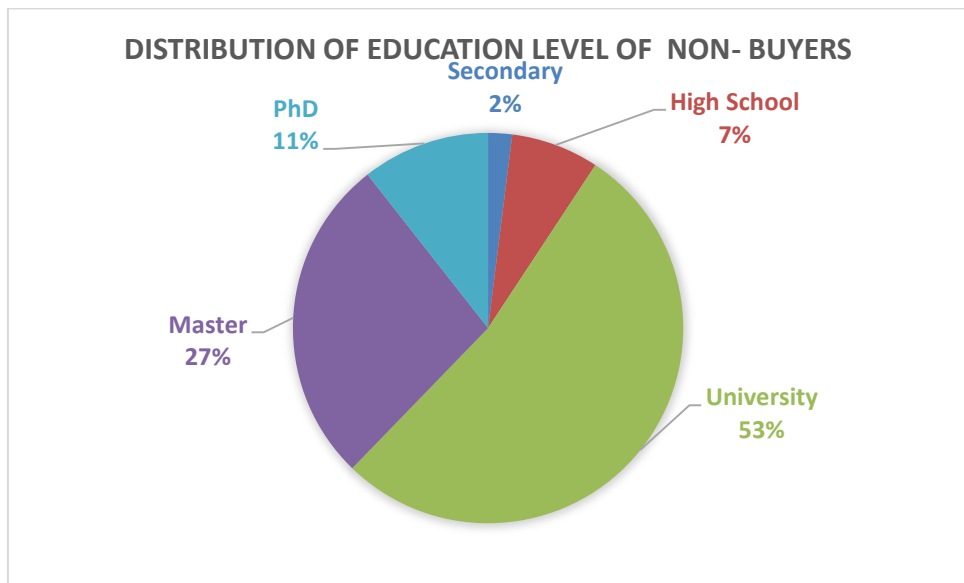


Figure 6.3 Distribution of Education Level of Non-Buyers

Hypothesis  $H_{2_1}$  is “Consumers with higher education level are more inclined to purchase organic food”. Consequently hypothesis null  $H_{2_0}$  is “Consumers with higher education level are not more inclined to purchase organic food”.

To test the accuracy of the hypothesis  $H_{2_1}$  “Consumers with higher education level are more inclined to purchase organic food”, Chi-square test is implemented.

Chi-squared analysis performed on the educational distribution of the respondents provided below results:

Obtained data are:

Table 6.5 Obtained data on educational level

Obtained data on educational level			
Educational Level	Users	Non-users	Total
Secondary	3	3	6
High School	26	11	37
University	215	80	295
Master	96	41	137
PhD	52	16	68
<b>TOTAL</b>	<b>392</b>	<b>151</b>	<b>543</b>

Expected data are:

Table 6.6 Expected data on educational level

Expected data on educational level			
Educational Level	Users	Non-users	Total
Secondary	4,3	1,6	6
High School	26,7	10,3	37
University	213,0	82,0	295
Master	98,9	38,1	137
PhD	49,1	18,9	68
<b>TOTAL</b>	<b>392</b>	<b>151</b>	<b>543</b>

Above data compute  $\chi^2_{h} = 2,5363$  and  $\chi^2 = 9,48$

Therefore  $\chi^2_{h} < \chi^2$

As  $\chi^2_{h} < \chi^2$  then Hypothesis  $H_0$  is accepted, rejecting hypothesis  $H_1$ .

Hypothesis  $H_{2_1}$  being “Consumers with higher education level are more inclined to purchase organic food” and null hypothesis  $H_{2_0}$  is “Consumers with higher education level are not more inclined to purchase organic food”; the result of chi-square test implemented on the replies of the survey’s respondents is accepting  $H_{2_0}$  “Consumers with higher education level are not more inclined to purchase organic food” and is rejecting hypothesis  $H_{2_1}$  “Consumers with higher education level are more inclined to purchase organic food”.

This result is different than most studies reviewed in the literature. Once again

taking into consideration the years the previous studies have been conducted, the outcome of the education's effect on OPF purchasing can be interpreted as that with the years passing, the perception of consumers on OPFs has changed positively, no matter their education degrees and accordingly reflecting on their OPFs purchasing attitudes and behaviors. Effect of developed telecommunication can be a reason of this change in education's effect on OPFs purchasing behavior.

Eti İçli et al. (2016) also indicated, based on the data they gathered during their survey, that no significant differences have been detected with regard to educational levels in OPF purchasing preferences.

### **H.3. Older Consumers Are More Inclined To Purchase Organic Food**

Researchers have worked on the age effect of organically produced food purchase on consumers. Jolly and Norris (1991) stated that organically produced food consumers are younger than non-buying consumers. On the other hand, Wandel and Bugge (1997), Fotopoulos and Krystallis (2002) stated that as older consumers' awareness is higher on health, they are more willing to pay for organic food, than younger consumers. On the other hand, younger consumers are more sensitive on environmental issues but as their income is generally more limited than older consumers, they are not willing to and cannot afford paying high prices for organic food. The study of Kafka and von Alvensleben (1998) cites based on the result of the study they have conducted among German consumers that the age group which is between 30 and 50 years old has the highest concern about food safety and that the oldest age group is the less concerned about the matter. They also cite that their results are consistent with the studies conducted previously by Fricke in 1996 and by von Alvensleben in 1994.

OPF buyers and non-buyers based on their age are detailed as here below:

Table 6.7 Distribution of buyers and non-buyers as per age

Distribution of buyers and non-buyers as per age			
Age	Buyers	Non-Buyers	Total
-20	7	3	10
21-30	42	16	58
31-40	56	17	73
41-50	119	45	164
51-60	113	42	155
60+	55	28	83
<b>TOTAL</b>	<b>392</b>	<b>151</b>	<b>543</b>

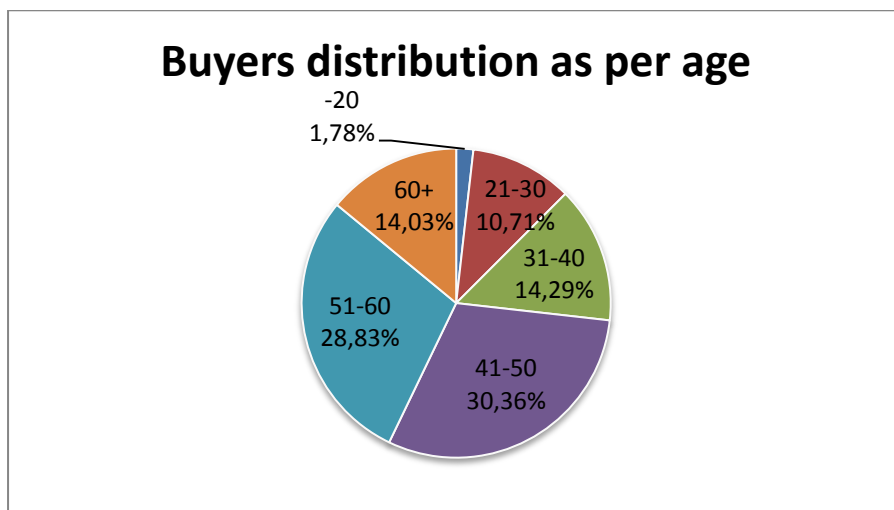


Figure 6.4 Buyers distribution as per age

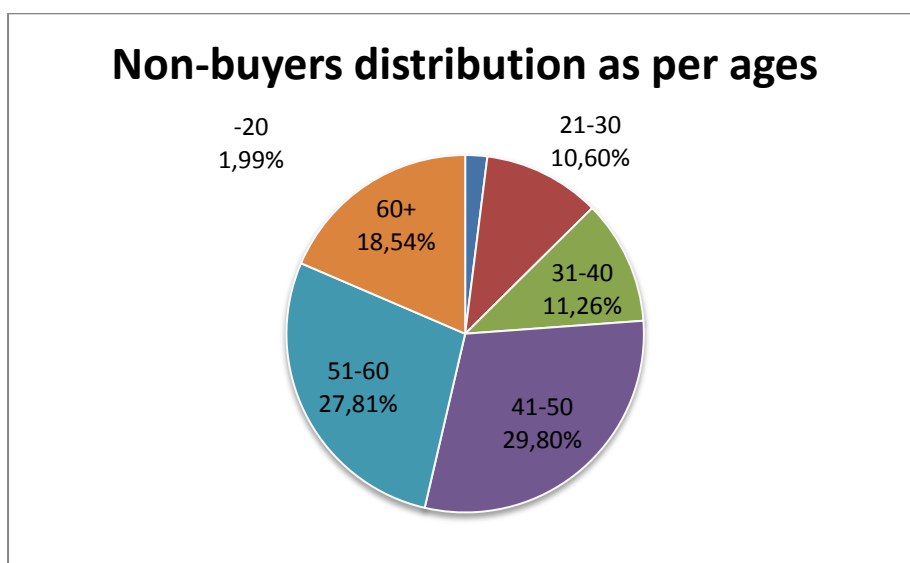


Figure 6.5 Non-buyers distribution as per age



Hypothesis H<sub>31</sub> is “Older consumers are more inclined to purchase organic food”. Consequently hypothesis null H<sub>30</sub> is “Older consumers are not more inclined to purchase organic food”.

To test the accuracy of the hypothesis H<sub>31</sub> “Older consumers are more inclined to purchase organic food”, Chi-square test is implemented.

Chi-squared analysis performed on the age distribution of the respondents provided below results:

Obtained data are:

Table 6.8 Obtained data on age

<b>Obtained data on age</b>			
<b>Age</b>	<b>Buyer</b>	<b>Non-buyer</b>	<b>Total</b>
<b>-20</b>	7	3	<b>10</b>
<b>21-30</b>	42	16	<b>58</b>
<b>31-40</b>	56	17	<b>73</b>
<b>41-50</b>	119	45	<b>164</b>
<b>51-60</b>	113	42	<b>155</b>
<b>60+</b>	<b>55</b>	<b>28</b>	<b>83</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

Expected data are:

Table 6.9 Expected data on age

<b>Expected data on age</b>			
<b>Age</b>	<b>Buyer</b>	<b>Non-buyer</b>	<b>Total</b>
<b>-20</b>	7.2	2.8	<b>10</b>
<b>21-30</b>	41.9	16.1	<b>58</b>
<b>31-40</b>	52.7	20.3	<b>73</b>
<b>41-50</b>	118.4	45.6	<b>164</b>
<b>51-60</b>	111.9	43.1	<b>155</b>
<b>60+</b>	<b>59.9</b>	<b>23.1</b>	<b>83</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

**Above data compute  $\chi^2_{h} = 2,19$  and  $\chi^2 = 11.07$**

**Therefore  $\chi^2_{h} < \chi^2$**

As  $\chi^2_{h} < \chi^2$  then Hypothesis Ho is accepted, rejecting hypothesis H<sub>1</sub>.

Hypothesis H<sub>31</sub> being “Older consumers are more inclined to purchase organic foods” and null hypothesis H<sub>30</sub> is “Older consumers are not more inclined to purchase organic foods”; the result of chi-square test implemented on the replies of the survey’s respondents is accepting H<sub>30</sub> being “Older consumers are not more

inclined to purchase organic foods” and rejecting hypothesis H3<sub>1</sub> being “Older consumers are more inclined to purchase organic foods”.

This result is different than most studies reviewed in the literature. It can be thought and interpreted that the effect of age on OPF purchasing has changed in the course of years that have passed in decades and that consumers at younger ages also realized the importance of OPFs and started to purchase before getting sick, having a medical condition, having concerns about environment and animal welfare too.

Eti İçli et al. (2016) and Çabuk et al. (2008) also indicated, based on the data they gathered during their survey, that no significant differences have been detected with regard to age in OPF purchasing preferences.

#### **H.4. Consumers with Children Are More Inclined To Purchase Organic Food**

Researchers have conducted several studies to determine whether the number of children in the household affects the organically produced foods purchase of the consumers. Reicks et al. (1997) and Thompson and Kidwell (1998) pointed out that consumers having children are affected positively in purchase of organic foods. They also stated that the age of the children is another factor that is affecting the organically produced foods purchase behavior. On the other hand Magnusson et al. (2001) didn't find any correlation between the existence of a child and the purchase of organic foods. Govindasamy and Italia (1999) indicated that females with children are more inclined to buy organic foods. Laroche et al. (2001) made a point on female and married consumers having children as more inclined to buy organic foods.

OPF buyers and non-buyers based on their number of children are detailed as here below:

Table 6.10 Distribution of number of children of OPF buyers and non-buyers

<b>Distribution of number of children of OPF buyers and non-buyers</b>			
<b>Number of Children</b>	<b>Buyers</b>	<b>Non-buyers</b>	<b>Total</b>
<b>No child</b>	149	70	219
<b>1 child</b>	110	39	149
<b>2 children</b>	120	40	160
<b>3 children</b>	12	1	13
<b>4 children</b>	1	1	2
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

Hypothesis  $H_{4_1}$  is “Consumers with children are more inclined to purchase organic food”. Consequently hypothesis null  $H_{3_0}$  is “Consumers with children are not more inclined to purchase organic food”.

To test the accuracy of the hypothesis  $H_{4_1}$  is “Consumers with children are more inclined to purchase organic food”, Chi-square test is implemented.

Chi-squared analysis performed on the number of children distribution of the respondents provided below results:

Obtained data are:

Table 6.11 Obtained data on number of children

<b>Obtained data on number of children</b>			
<b>Number of Children</b>	<b>Buyer</b>	<b>Non-buyer</b>	<b>Total</b>
<b>No child</b>	149	70	<b>219</b>
<b>1 child</b>	110	39	<b>149</b>
<b>2 children</b>	120	40	<b>160</b>
<b>3 children</b>	12	1	<b>13</b>
<b>4 children</b>	1	1	<b>2</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

Expected data are:

Table 6.12 Expected data on number of children

<b>Expected data on number of children</b>			
<b>Number of Children</b>	<b>Buyer</b>	<b>Non-buyer</b>	<b>Total</b>
<b>No child</b>	36.8	14.2	<b>219</b>
<b>1 child</b>	117.0	45.0	<b>149</b>
<b>2 children</b>	98.9	38.1	<b>160</b>
<b>3 children</b>	117.0	45.0	<b>13</b>
<b>4 children</b>	22.4	8.6	<b>2</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

**Above data compute  $\chi^2_{h} = 5.81$  and  $\chi^2 = 9.48$**

**Therefore  $\chi^2_{h} < \chi^2$**

As  $\chi^2_{h} < \chi^2$  then Hypothesis  $H_0$  is accepted, rejecting hypothesis  $H_1$ .

Hypothesis  $H_{4_1}$  being “Consumers with children are more inclined to purchase organic food”, null hypothesis  $H_{4_0}$  is “Consumers with children are not more inclined to purchase organic food”; the result of chi-square test implemented on the replies of the survey’s respondents is accepting  $H_{4_0}$  which is “Consumers with

children are not more inclined to purchase organic food” and rejecting hypothesis H4<sub>1</sub> being “Consumers with children are more inclined to purchase organic food”.

As the literature review revealed that some studies indicate a correlation between number of children and OPF purchase and some point out that there is no correlation, this result is in conformity with the literature review.

### **H.5. Married People Are More Inclined To Purchase Organic Food**

Researchers Dimitri and Dettmann (2011) conducted a study in the USA and stated that civil status is affecting the behavior of OPFs purchase. Their research results showed that married people are more likely to purchase OPFs when compared with single people.

Curl et al. (2013) on the other hand, stated that civil status is not affecting organically produced foods purchase behavior among consumers.

Hypothesis H5<sub>1</sub> is “Married people are more inclined to purchase organic food”. Consequently hypothesis null H5<sub>0</sub> is “Married people are not more inclined to purchase organic food”.

To test the accuracy of the hypothesis H5<sub>1</sub> is “Married people are more inclined to purchase organic food”, Chi-square test is implemented.

Chi-squared analysis performed on the civil status distribution of the respondents provided below results:

Table 6.13 Distribution of the civil status of the respondents

<b>DISTRIBUTION OF THE CIVIL STATUS OF THE RESPONDENTS</b>		
<b>Civil Status</b>	<b>RESPONDENTS</b>	<b>PERCENTAGE</b>
<b>Single</b>	170	30,90
<b>Married</b>	373	69,10
<b>TOTAL</b>	<b>543</b>	<b>100,00</b>

Obtained data are:

Table 6.14 Obtained data on civil status

Obtained data on civil status			
Civil Status	Buyer	Non-Buyer	Total
Married	280	93	373
Single	111	59	170
<b>Total</b>	<b>391</b>	<b>152</b>	<b>543</b>

Expected data are:

Table 6.15 Expected data on civil status

Expected data on civil status			
	Buyer	Non-Buyer	Total
Married	268.59	104.41	373
Single	122.41	47.59	170
<b>Total</b>	<b>391</b>	<b>152</b>	<b>543</b>

**Above data compute  $\chi^2_{h} = 5.53$  and  $\chi^2 = 3.84$**

**Therefore  $\chi^2_{h} > \chi^2$**

As  $\chi^2_{h} > \chi^2$  then Hypothesis  $H_0$  is rejected, accepting hypothesis  $H_1$ .

As hypothesis  $H_{5_1}$  is “Married people are more inclined to purchase organic foods”, null  $H_{5_0}$  is “Married people are not more inclined to purchase organic foods”; the result of chi-square test implemented on the replies of the survey’s respondents is accepting  $H_{5_1}$  is “Married people are more inclined to purchase organic foods” and rejecting  $H_{5_0}$  is “Married people are not more inclined to purchase organic foods”.

As the literature review revealed that some studies indicate a correlation between civil status and OPF purchase and some point out that there is no correlation, this result is in conformity with the literature review.

## **H.6. Cosmetic Concerns Deter Consumers To Purchase Organically Produced Food**

As some researchers (Ott, 1990; Thompson and Kidwell, 1998) indicated that consumers who don’t buy OPF have negative perception because of cosmetic concerns (such as blemishes, worms, imperfect shapes, dirt not removed from the

root vegetables), this study is trying to determine whether cosmetic concerns deter consumer to purchase organically produced food through Hypothesis H6<sub>1</sub> "Cosmetic Concerns deter consumers to purchase organically produced food".

To test this hypothesis, the study proposed the statement with number 36 ; "Ensuring a better look for organically produced food as good as non-organic ones, can increase their purchase" to both group of respondents as buyers and non-buyers.

Table 6.16 Statement "Ensuring a better look for organically produced food as good as non-organic ones, can increase their purchase" proposed to both groups

<b>Statement "Ensuring a better look for organically produced food as good as non-organic ones can increase their purchase"</b>		
<b>Statement 36 for both groups</b>	<b>Buyer Respondents</b>	<b>Non-buyer Respondent</b>
<b>Strongly Agree</b>	43	8
<b>Agree</b>	116	46
<b>Don't know</b>	97	40
<b>Disagree</b>	113	49
<b>Totally disagree</b>	23	8
<b>Total</b>	<b>392</b>	<b>151</b>

Implementing chi-squared test to the data obtained from OPF buyers and non-buyers;

Observed data are:

Table 6.17 Observed data on the statement "Ensuring a better look for organically produced food as good as non-organic ones, can increase their purchase" proposed to both groups

<b>Observed data on the statement "Ensuring a better look for organically produced food as good as non-organic ones, can increase their purchase" proposed to both groups</b>			
<b>Likert</b>	<b>Buyer</b>	<b>Non-buyer</b>	<b>Total</b>
<b>Strongly Agree</b>	43	8	<b>51</b>
<b>Agree</b>	116	46	<b>162</b>
<b>I don't know</b>	97	40	<b>137</b>
<b>Disagree</b>	113	49	<b>162</b>
<b>Strongly Disagree</b>	23	8	<b>31</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

Expected data are:

Table 6.18 Expected data on the statement “Ensuring a better look for organically produced food as good as non-organic ones, can increase their purchase” proposed to both groups

<b>Expected data on the statement “Ensuring a better look for organically produced food as good as non-organic ones, can increase their purchase” proposed to both groups</b>			
<b>Likert</b>	<b>Buyer</b>	<b>Non-buyer</b>	<b>Total</b>
<b>Strongly Agree</b>	36.8	14.2	<b>51</b>
<b>Agree</b>	117.0	45.0	<b>162</b>
<b>I don't know</b>	98.9	38.1	<b>137</b>
<b>Disagree</b>	117.0	45.0	<b>162</b>
<b>Strongly Disagree</b>	22.4	8.6	<b>31</b>
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

Above data compute  $\chi^2_{obs} = 4.43$  and  $\chi^2_{crit} = 9.48$

Therefore  $\chi^2_{obs} < \chi^2_{crit}$

As  $\chi^2_{obs} < \chi^2_{crit}$  then Hypothesis  $H_0$  is rejected, accepting hypothesis  $H_1$ .

As hypothesis  $H_{6_1}$  is “cosmetic concerns deter consumers to purchase organically produced food”, null  $H_{6_0}$  is “cosmetic concerns do not deter consumers to purchase organically produced food”; the result of chi-square test implemented on the replies of the survey’s respondents is accepting  $H_{6_0}$  which is “cosmetic concerns do not deter consumers to purchase organically produced food” and rejecting  $H_{6_1}$  which is “cosmetic concerns deter consumers to purchase organically produced food”.

This result which is contrary to the literature review can be interpreted, taking into consideration that the latest study dates back to 1998; during two decades consumers attitudes and behaviors towards appearance of OPFs have developed positively and they are no longer deeming appearance of OPFs as a deterrent.

### **H.7. Packaging of Organically Produced Food Is Important For Organically Produced Food Buyers**

In the literature there are few studies about the importance of packaging in the purchase/marketing of OPFs. The study of Sarıkaya (2007), conducted among Turkish consumers indicated the weight of the “importance of a well packaging” as 2,78. In another study conducted for a Master thesis it is stated that consumers are

purchasing OPFs considering the quality of the packaging as well as its ability to provide well storage, being healthy, facilitating its transportation and due to its safety (Ongun, 2016). According to Birinci and Er (2006), lack of packaging is an important factor affecting the local market sales for OPFs.

To test the importance of packaging as a factor affecting the purchase preference of consumers when it comes to OPFs, the survey conducted for this thesis proposed the statement with question number 37 “Organically produced products being delivered till our homes with no packaging is a deterrent for not-buying” to both of the buyer and non-buyer groups.

The replies provided by the respondents are as below:

Table 6.19 Replies given to the statement “Organically produced products being delivered till our homes with no packaging is a deterrent for not-buying”

Replies given to the statement “Organically produced products being delivered till our homes with no packaging is a deterrent for not-buying”		
<b>Statement 37 for both groups:</b>	<b>Buyer Respondents</b>	<b>Non-buyer Respondents</b>
<b>Strongly Agree</b>	13	7
<b>Agree</b>	117	40
<b>Don’t know</b>	111	12
<b>Disagree</b>	138	72
<b>Totally disagree</b>	13	20
<b>Total</b>	<b>392</b>	<b>151</b>

Implementing chi-squared test to the replies obtained from OPF buyers and non-buyers, below data are obtained:



Observed data are:

Table 6.20 Observed data on the statement “Organically produced products being delivered till our homes with no packaging is a deterrent for not-buying”

<b>Observed data on the statement “Organically produced products being delivered till our homes with no packaging is a deterrent for not-buying”</b>			
	<b>Buyer</b>	<b>Non-Buyer</b>	<b>Total</b>
<b>Strongly agree</b>	13	7	20
<b>Agree</b>	117	40	157
<b>I don't know</b>	111	12	123
<b>Disagree</b>	138	72	210
<b>Strongly disagree</b>	13	20	33
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

Expected data are:

Table 6.21 Expected data on the statement “Organically produced products being delivered till our homes with no packaging is a deterrent for not-buying”

<b>Expected data on the statement “Organically produced products being delivered till our homes with no packaging is a deterrent for not-buying”</b>			
	<b>Buyer</b>	<b>Non-Buyer</b>	<b>Total</b>
<b>Strongly agree</b>	14.44	5.56	20
<b>Agree</b>	113.34	43.66	157
<b>I don't know</b>	88.80	34.20	123
<b>Disagree</b>	151.60	58.40	210
<b>Strongly disagree</b>	23.82	9.18	33
<b>Total</b>	<b>392</b>	<b>151</b>	<b>543</b>

**Above data compute  $\chi^2h = 42.97$  and  $\chi^2 = 9.48$**

**Therefore  $\chi^2h > \chi^2$**

As  $\chi^2h > \chi^2$  then Hypothesis  $H_0$  is rejected, accepting hypothesis  $H_1$ .

As Hypothesis  $H_{71}$  “Packaging of the food is important for organically produced food buyers” and null hypothesis  $H_{70}$  is “Packaging of the food is not important for organically produced food buyers”; the result of chi-square test implemented on the replies of the survey’s respondents is rejecting  $H_{70}$  which is “Packaging of the food is not important for organically produced food buyers” and is accepting  $H_{71}$  which is “Packaging of the food is important for organically produced food buyers”.

### **H.8. If Consumers Can Trust the Authenticity of the Organically Produced Foods They Will Purchase / Purchase More**

As one of the aims of this thesis is to determine whether increase in reliability on OPF's authenticity can increase or not its purchase; the survey conducted for this thesis proposed a statement to the respondents of both buyer and non-buyer groups. The replies given to the proposed statement with statement number 35 for buyers and number 34 for non-buyers "Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell-phones enabling instant check - can increase their consumption" are as below:

Table 6.22 Statement "Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell-phones enabling instant check - can increase their consumption"

<b>Statement "Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell-phones enabling instant check - can increase their consumption"</b>		
<b>Statement 35 for buyers / Statement 34 for non-buyers:</b>	<b>Buyer Respondents</b>	<b>Non-buyer Respondent</b>
<b>Strongly Agree</b>	195	7
<b>Agree</b>	153	40
<b>Don't know</b>	34	12
<b>Disagree</b>	9	72
<b>Totally disagree</b>	1	20
<b>Total</b>	<b>392</b>	<b>151</b>

Observed data are:

Table 6.23 Observed data for the statement “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell-phones enabling instant check - can increase their consumption”

<b>Observed data for the statement “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell-phones enabling instant check - can increase their consumption”</b>			
	<b>Buyer</b>	<b>Non-Buyer</b>	<b>Total</b>
<b>Strongly agree</b>	195	42	237
<b>Agree</b>	153	74	227
<b>I don't know</b>	34	25	59
<b>Disagree</b>	9	5	14
<b>Strongly disagree</b>	1	4	5
<b>Total</b>	<b>392</b>	<b>150</b>	<b>542</b>

Expected figures are:

Table 6.24 Expected data for the statement “Implementation of a hundred per cent reliable control system for the certification of organic products - such as an application for cell-phones enabling instant check - can increase their consumption”

<b>Expected Data For The Statement “Implementation of a Hundred Per Cent Reliable Control System for the Certification of Organic Products - Such as an Application for Cell-Phones Enabling Instant Check - Can Increase Their Consumption”</b>			
	<b>Buyer</b>	<b>Non-Buyer</b>	<b>Total</b>
<b>Strongly agree</b>	171.41	65.59	237
<b>Agree</b>	164.18	62.82	227
<b>I don't know</b>	42.67	16.33	59
<b>Disagree</b>	10.13	3.87	14
<b>Strongly disagree</b>	3.62	1.38	5
<b>Total</b>	<b>392</b>	<b>150</b>	<b>542</b>

**Above data compute  $\chi^2_{obs} = 23.13$  and  $\chi^2_{crit} = 9.48$**

**Therefore  $\chi^2_{obs} > \chi^2_{crit}$**

As  $\chi^2_{obs} > \chi^2_{crit}$  then Hypothesis  $H_0$  is rejected, accepting hypothesis  $H_1$ .

As Hypothesis  $H_{81}$  is “if consumers can trust the authenticity of the organically produced foods they will purchase / purchase more” and null hypothesis  $H_{80}$  is “even if consumers can trust the authenticity of the organically produced foods they will not purchase / purchase more”; the result of chi-square test implemented on the replies of the survey’s respondents is rejecting  $H_{80}$  which is “even if consumers can

trust the authenticity of the organically produced foods they will not purchase / purchase more” and is accepting  $H_{7_1}$  which is “if consumers can trust the authenticity of the organically produced foods they will purchase / purchase more”.

Hence, it is observed that once consumers shall be hundred per cent sure of the authenticity of the OPFs, they shall purchase or purchase more often.

## **CHAPTER SEVEN**

### **7. CONCLUSION**

Consumers' increasing interest towards OPFs since mid80s is a hope promising attitude for human and animal health as well as the sustainability of our planet, when positive effects of OA are taken into consideration.

Apart environmental and social consequences, economic consequences of OA must not be neglected neither by producers nor by local and national authorities. Although the most important amount of OPFs produced in Turkey is exported to European Countries and to USA, local consumers who are already purchasing OPFs, can be convinced to purchase regularly and more OPFs. When it comes to consumers who are not purchasing OPFs at all, careful study of the deterrents that are preventing them to purchase OPFs can provide considerable positive changes in their attitudes towards OPFs and in their purchasing behaviors.

The survey which is conducted for this thesis revealed outcomes that differ by the results obtained from previous studies carried out since 1990s. For instance gender effect on OPF purchase behavior seems to be changing. Previous studies indicated that females were more inclined to purchase OPFs. The survey and its analysis conducted for this thesis revealed that this is not the case anymore. This outcome can be a good base for increasing OPF demand as males are now interested in OPFs. Apparently passing years have raised their awareness and conscious regarding environmental and health issues.

The same situation goes for education level of consumers. Despite previous studies indicating OPF consumption to be related with higher education levels of

consumers, the survey conducted for this thesis indicated otherwise. Consumers who have no higher education also are interested now in OPFs and they reflect their interest into purchase. This result may be due to broad telecommunication facilities which help knowledge to spread.

Age factor seems to have been changed also as per the outcomes of the survey conducted for this thesis. Although previous studies indicate that consumers with older ages were more inclined to purchase OPF, the survey of this thesis indicated the contrary. This situation can be explained by raised awareness and consciousness of younger consumers on environmental and health issues which can be explained in turn by broad telecommunication facilities spreading the news all around the world in a jiffy.

The effects of becoming a parent or getting married on the purchase of OPFs were inconclusive based on previous studies. Some indicated a correlation between OPF purchase and being married or having children, while some indicated the opposite. Analysis of the survey indicated that consumers with children or married consumers are not more inclined to purchase OPFs. These results can be the reflection of conscious consumers who consider purchasing OPF before getting married or having children as they are concerned about the environment, their health or animal welfare.

One of the most important factors obtained by the survey with regard to raised awareness and conscious of consumers on OPFs is that they do not see imperfect shapes, blemishes and bugs that exist on OPFs as a deterrent for not purchasing them. They do consider them as a natural consequence of OA.

As the survey indicated, packaging of OPFs is important for consumers. They are paying attention to how the OPF is packaged. Therefore proper packaging must be studied regarding OPFs together with consumers' raised concern on environmental issues in regulating marketing activities of OPFs to increase the demand.

On the other hand deterrents must be studied carefully too to increase the demand and make OA a good resource of income for producers and a value added for Turkish economy.

Although considerably high price premium of OPFs which are approximately 150-200% higher than CPFs in Turkey is observed to be the most important deterrent in purchasing OPFs, lack of trust is a big question mark which has to be eliminated.

The study demonstrated that consumers, both buyers and non-buyers don't trust the certification process and believe that even organic food labels are not enough to ensure them on the authenticity of OPFs. Paying a considerably high price for OPFs they want to be ensured of the authenticity of the food. They are willing to pay a higher price and to purchase from local producers to support them economically, but they think that they can be cheated easily and are understandably reluctant in purchasing OPFs. They state that if a hundred per cent reliable control system is implemented, they will feel safe and secured. Even this factor is a guide for how to modify OA procedures from soil to shelf.

Consumers believe that OPFs are of a higher quality compared to CPFs, that consuming OPFs helps to preserve and sustain the environment, ensure human health and animal welfare, that support local producers, that they taste better and smell better, like the ones they were used to consume in their childhood. They don't consider imperfect shapes and blemishes of OPFs as a deterrent, but they think that OPFs must be better presented to consumers with regard to their benefits for humans, animals and environment. They think that a better presentation and explanation of the development of OA shall cause an increase in the demand.

Consumers who are non-buyers know that OPFs are of high quality and they have a positive effect on their life. Yet not trusting to the certification process, they are not willing to purchase.

Lack of availability is another factor deterring consumers from both groups to purchase OPFs. They state that had OPFs been more available, they would be purchased more.

Excessive prices are, of course, the most important deterrent for consumers of both groups. They declare that decreased prices shall increase the purchase.

Modification and regulation to be performed on the reliability of OPFs, taking into consideration the outcomes of the survey conducted for this thesis can increase the demand for OPFs from local consumers. Increased demand can increase the production of OPFs and accordingly decrease the prices. Decreased prices can increase purchase of OPFs. Increased purchases can increase the number of agriculturists who work on OA field. Increased work on OA field can increase the surfaces on which OA is carried out. Increased plantation surfaces can increase the employment and decrease unemployment. Decreased unemployment can increase personal income of individuals and their purchasing power. Increased income and

purchasing power can lead eventually to economic growth. All starting from a seed, as Atatürk said “The foundation of the national economy is agriculture”.



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## APPENDICES

### Appendix -A : History of Organic Farming in Turkey

<b>HISTORY OF ORGANIC FARMING IN TURKEY</b>	
<b>1984</b>	<p>Starting of Organic Agriculture (OA).</p> <p>The OA started under the rules and regulations of International federation of Organic Agriculture Movements (IFOAM) which was founded in 1972 and no national regulations were set yet.</p>
<b>1992</b>	Foundation of the Ecological Agriculture Organization (ETO) of Turkey.
<b>1994</b>	<p>First national regulation set in parallel with the European Union (EU) Regulation 2092/9 of June 24, 1991.</p> <p>Development Bank of Turkey (TKB) assigned as the Authority in charge of the organic agriculture in Turkey.</p>
<b>1995</b>	<p>Foundation of the Ecological Agriculture Committee (ET) and the National Guidance Committee of Ecological Agriculture.</p> <p>Modifications made on 29.6.1995, on the first regulations.</p>
<b>2002</b>	<p>Foundation of Organic Agriculture Committee.</p> <p>National Organic Agriculture Guidance Committee.</p> <p>National Organic Agriculture Trade Committee.</p> <p>National Committee of Organic Agriculture Researches and Projects</p> <p>Formation of second regulation on 11.7.2002.</p>
<b>2003</b>	Foundation of TKB and Agricultural Production Development Center (TÜGEM) and Head Department of Alternative Agricultural Production Techniques on 22.7.2003.
<b>2004</b>	Organic Agriculture Law enacted on 03.12.2004

Appendix-A: Continues

<b>2005</b>	Foundation of Organic Agriculture Committee and National Organic Agriculture Guidance Committee as per the new legislation. Directive on the Principles and Application of Organic Agriculture in harmony with the EU Regulation 2092/91 and Organic Agriculture Law on 10.6.2005.
<b>2006 - ...</b>	Modifications on the Directive on 25.10.2008 / 17.10.2009 and 17.10.2010. Directive on the Principles and Application of Organic Agriculture in harmony with the EU Regulation 834/2007. August 18, 2010.

**Appendix-B: Certification Institutions Accredited and Authorized by the Ministry of Agriculture and Forestry**

<b>Institutions' Code</b>	<b>Provided Control and Certification Services</b>
TR-OT-01	Plant, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-03	Plant, animal, aquaculture, processing, packaging, labeling, storage, transportation, marketing.
TR-OT-04	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents.
TR-OT-06	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents.
TR-OT-11	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents.
TR-OT-12	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-13	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents.
TR-OT-14	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents.
TR-OT-15	Plant, animal, wild collecting, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-18	Plant, animal, wild collecting, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents.
TR-OT-19	Plant, animal, wild collecting, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-22	Plant, animal, wild collecting, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-23	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents.
TR-OT-25	Plant, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-26	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-27	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents
TR-OT-28	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-29	Plant, processing, packaging, labeling, storage, transportation, marketing.
TR-OT-31	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-34	Plant, wild collection, processing, packaging, labeling, storage, transportation, marketing, fertilizers, soil amending agents, crop protecting agents.

Appendix -B: Continues

TR-OT-35	Plant, animal, aquaculture, processing, packaging, labeling, storage, transportation, marketing, fertilizers, soil amending agents, crop protecting agents
TR-OT-37	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents
TR-OT-40	Plant, animal, aquaculture, processing, packaging, labeling, storage, transportation, marketing,
TR-OT-41	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-42	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-43	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-44	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-45	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents
TR-OT-46	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-47	Plant, animal, aquaculture, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-48	Plant, animal, aquaculture, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents
TR-OT-49	Plant, animal, processing, packaging, labeling, storage, transportation and marketing, fertilizers, soil amending agents, crop protecting agents
TR-OT-50	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-51	Plant, animal, processing, packaging, labeling, storage, transportation and marketing.
TR-OT-52	Plant, processing, packaging, labeling, storage, transportation and marketing.

Source: Ministry of Agriculture and Forestry

## **VITAE**

Anda Elvan Yarman Ak was born on May 22, 1968 in Istanbul Turkey. After having completed her studies in Sainte Pulchérie French School and Adana Yeni College, she started her dentistry studies in Marmara University in 1987 which she left in 1990. She restarted her studies in 2002 in the Business Administration Faculty of Anadolu University which she completed in 2008. In 2020, she had her Master degree in the Graduate School of Social Sciences in Işık University. She is starting her PhD studies in the same university in Contemporary Management.