

## **Attitudes and Behavior of Turkish Consumers With Respect to Organic Foods**

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### **Abstract**

*The purpose of this study is to examine the attitudes and behavior of Turkish consumers with respect to organic foods. Data was collected from 500 consumers living in Istanbul, Turkey through a structured and undisguised questionnaire. It was found that about one fifth of the respondents either did not buy organic foods at all or bought them very infrequently. High price of organic foods seems to be the main reason for not purchasing them followed by a lack of availability whereas health of the self and/or the family is the first reason given for purchasing them. Findings related to the analyses of demographic variables revealed some statistically significant differences among different consumer groups in case of their organic food purchase frequency, their reasons for purchasing and not purchasing organic foods, and the conditions under which they would be willing to purchase organic foods more. Implications of the study for food producers/retailers, regulatory agencies, and further research are also included in the paper.*

**Key Words:** Organic foods, Turkish consumers, Attitudes, Behavior

### **1. Introduction**

Agriculture is of prime importance in peoples' lives because it provides the vital element of life: food. However, it is quite an unfortunate fact that the world population is expected to reach 9 billion by the year 2030 given also that agricultural land is becoming scarcer and poorer in quality (Gomiero et al., 2008). Today, it is seen that conventional agriculture, which has been used for hundreds of years, has given rise to detrimental consequences both on the environment and all living beings on the planet. This is mostly due to the extensive (and at times unconscious) use of chemical fertilizers to promote plant growth, of insecticides to reduce pests and disease, of herbicides to manage weeds, of antibiotics, growth hormones, and medications given to animals to prevent disease and enhance growth (Mayo Clinic, 2012). Organic agriculture has been offered as a means of dealing with the above mentioned issues and of maintaining ecological balance once again, aiding in sustainability efforts, as well.

There are different explanations for organic agriculture but all point out that "it is a system that relies on ecosystem management rather than external agricultural inputs. It is a system that begins to consider potential environmental and social impacts by eliminating the use of synthetic inputs, such as synthetic fertilizers and pesticides (which include herbicides, insecticides and fungicides), veterinary drugs, genetically modified seeds and breeds, preservatives, additives and irradiation. These are replaced with site-specific management practices that maintain and increase long-term soil fertility and prevent pest and diseases" (Food and Agriculture Organization, 2012).

In organic agriculture, environmentally and animal friendly farming methods are used on organic farms to produce food. Animal welfare is at the heart of the system, farm animals are allowed to lead a truly free-range life; a diversity of crops and animals are raised on the farm (Soil Association, 2012). "Put simply, it seeks to provide the consumer, with fresh, tasty and authentic food while respecting nature and animal welfare and creating new opportunities for rural people" (European Commission, 2012).

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Organic agriculture is based on four principles: “The principle of health: organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible; the principle of ecology: organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them; the principle of fairness: organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities, and the principle of care: organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment (IFOAM, 2012).

Organic foods which have first entered the lives of few people around the world in the form of a niche market have now begun to be consumed by large numbers of people all over the globe. Not only ecological balance considerations but also the increasing food safety concerns of consumers (be it through the mad cow disease, Salmonella encounters in meat and eggs, Campylobacter encounters in meat, Listeria encounters in some milk products, contamination of drinking water by pesticides and nitrates, or increase in the existence frequency of dioxin in foods and feeds (Tosun & Kaya, 2010), irradiation, additives and preservatives, and artificial colors (Arvanitoyannis et al., 2003), together with genetically modified organisms) have spurred this growth. “The greatest food safety concern of consumers is that suspected or known cancer-causing chemicals are being used in food production and processing, with unknown long-run health risks” (Arvanitoyannis et al., 2003, p.95). Besides, this trend is most likely to continue and even larger masses of people may be expected to become regular users of organic foods in the coming years provided that prevailing conventional agricultural product consumption habits can somehow be altered – which indeed is quite a difficult process. As Lockie et al. (2002) point out, “the success of strategies to create and stabilize organic good networks will be dependent on the ability to mobilize people as organic consumers by providing foods that materially and symbolically satisfy and /or influence those peoples’ needs, desires, pleasures, and terrors more successfully than other available foods” (p. 24).

Within this frame, this study aims at revealing the attitudes and self-reported behavior of Turkish consumers with respect to organic foods, to increase awareness on this important topic, and to form the basis of a small step towards the change of consumption patterns of individuals both in the Turkish market and in other markets where there is a need for organic agriculture (and hence organic foods) to be more widely accepted and used.

## **2. Literature Review**

“The future of organic agriculture will depend, to a large extent, on consumer demand” (Gracia & Magistris, 2008, p. 387); hence, it is of vital importance to figure out the factors influential in consumers’ preferences for organic food. As such, much research has been conducted, especially in Europe and the US, on organic food purchasing motives as well as on factors that hinder organic purchases, and on the demographics of organic food consumers.

With respect to organic food purchasing motives, health considerations and environmental concern rank among the top factors influential on organic food preferences. (Lockie et al., 2002; Magnusson et al., 2003; Chryssohoidis and Krystallis, 2005; Gracia and Magistris, 2008; Hughner et al., 2007; Li et al., 2007; Wier et al., 2008; Zepeda and Deal, 2009; Bellows et al., 2010; Cerjak et al., 2010; Hasançebi, 2010; Hjelmar, 2011; Smith and Paladino, 2010; Stolz et al., 2010; Hamzaoui-Essoussi and Zahaf, 2012). Related to health considerations, concern over food safety has been mentioned in a number of studies. (Schifferstein and Ophius, 1998; Hughner et al., 2007; Quah and Tan, 2010; Hamzaoui-Essoussi and Zahaf, 2012). Concern over animal welfare also plays an important role in organic food purchases. (Lockie et al., 2002; Magnusson et al., 2003; Hughner et al., 2007; Li et al., 2007; Gracia and Magistris, 2008; Wier et al., 2008; Hjelmar, 2011).

Quality (Lockie et al., 2002; Ho, 2009; Smith and Paladino, 2010; Hamzaoui-Essoussi and Zahaf, 2012), better taste (Lockie et al., 2002; Dahm et al., 2009; Hasançebi, 2010; Hughner et al., 2007; Stolz et al., 2010; Hamzaoui-Essoussi and Zahaf, 2012), pursuit of hedonism (Chryssohoidis and Krystallis, 2005), shopping venue, positive beliefs toward organic food, a positive attitude toward cooking, a lack of religious affiliation, awareness of the organic label (Li et al., 2007), organic knowledge (Smith and Paladino, 2010), knowledge of organic food labels and organic foods (Li et al., 2007; Zepeda and Deal, 2009), familiarity (Fotopoulos and Chryssochoidis, 2000; Smith and Paladino, 2010), curiosity (Hughner et al., 2007; Smith and Paladino, 2010), frequency of buying – where those who have been organic food consumers for more than three years, buy organic foods more often- (Cerjak et al., 2010), sick friends / family (Quah and Tan, 2010), cooking habits (Zepeda and Deal, 2009),

the local economy (Hughner et al., 2007; Zepeda and Deal, 2009), economic characteristics of the population under study, personal and social values (Bellows et al., 2010), risk aversion (Smith and Paladino, 2010), role models of important people (Gotschi et al., 2010), social acceptance (Hjelmar, 2011), subjective norms (Smith and Paladino, 2010), subjective opinions of others, and culture (Lodorfos and Dennis, 2008) are among other factors that have been cited as organic food purchase motives.

Stolz et al. (2010) classify health concerns, environmental concerns, taste preferences, and preferred origin of food as 'attitudinal choice factors' and point out to the importance of the 'perceived utility' of the purchase that would compensate the existing price premium. Smith and Paladino (2010) further distinguish between personal health and family health, stating that the strongest motivator for buying organic products is personal health.

Organic food consumption is argued to be often related to an alternative lifestyle beginning with pregnancy (Pino et al., 2012), the arrival of a baby (Gotschi et al., 2010; Hamzaoui-Essoussi and Zahaf, 2012), presence of children in the family (Hamzaoui-Essoussi and Zahaf, 2012), certain illnesses (Gotschi et al., 2010; Pino et al., 2012), sick friends / family (Quah and Tan, 2010), people in the household with dietary restrictions (Li et al., 2007; Zepeda and Deal, 2009), or the spread of food-borne diseases (Pino et al., 2012). Importance attached to various organic food purchasing motives differ across countries. (Cerjak et al., 2010; Quah and Tan, 2010). Gracia and Magistris study (2008) also finds that EU study findings are different from US study findings.

With respect to factors that hinder organic food purchases, several studies point out to lack of / limited availability (Lockie et al., 2002; Chryssohoidis and Krystallis, 2005; Zepeda and Deal, 2009; Hasançebi, 2010; Smith and Paladino, 2010; Stolz et al., 2010; Hjelmar, 2011; Hamzaoui-Essoussi and Zahaf, 2012), search costs involved (Li et al., 2007), perceived effort involved (Smith and Paladino, 2010), economic factors (Gracia and Magistris, 2008), price premiums of organic compared to conventional food items (Zepeda and Deal, 2009; Cerjak et al., 2010; Hasançebi, 2010; Smith and Paladino, 2010; Stolz et al., 2010; Hjelmar, 2011; Hamzaoui-Essoussi and Zahaf, 2012), low personal income (Hjelmar, 2011), lack of perceived value (Hamzaoui-Essoussi and Zahaf, 2012), lack of awareness of the organic food label (Li et al., 2007; Stolz et al., 2010), lack of information on organic food methods (Cerjak et al., 2010), insufficient knowledge of organic foodstuffs (Hjelmar, 2011), lack of familiarity (Smith and Paladino, 2010); lack of knowledge of benefits (Zepeda and Deal, 2009), misunderstanding of organic food production processes (Hamzaoui-Essoussi and Zahaf, 2012), lack of trust in organic food and authorities (Sarıkaya, 2007; Lodorfos and Dennis, 2008; Zepeda and Deal, 2009; Hasançebi, 2010; Smith and Paladino, 2010; Stolz et al., 2010; Hjelmar, 2011; Hamzaoui-Essoussi and Zahaf, 2012), cosmetic quality (its appearance) (Smith and Paladino, 2010; Hamzaoui-Essoussi and Zahaf, 2012), and existing habitual dietary patterns (Li et al., 2007).

With respect to demographic characteristics of organic food buyers in foreign countries, sociodemographic research has led to rather mixed findings, at times being consistent, at times inconsistent, and at times insignificant (Fotopoulos and Chryssochoidis, 2000; Lockie et al., 2002; Arvanitoyannis et al., 2003; Magnusson et al., 2003; Li et al., 2007; Gracia and Magistris, 2008; Lodorfos and Dennis, 2008; Ho, 2009; Teisl et al., 2009; Cerjak et al., 2010; Quah and Tan, 2010) due most probably to differences in the populations surveyed, survey timing, and location (Hamzaoui-Essoussi and Zahaf, 2012). Findings of studies conducted in the Turkish market do not seem to be very consistent, either. In Kara's study (2007), it was found that high income, above-middle aged people who were sensitive to health risks preferred organic products more compared to other groups. No significant results were obtained with respect to gender, age, and marital status in Tirkeş's study (2008); families with children under 6 preferred organic products while mixed results were obtained in case of income. In a later study, Akın et al. (2010) found that those individuals under 40 years of age with income levels of more than 1,000TL and families with one or two children, especially females in this group seemed to be more sensitive to organic food compared to groups with other socio-demographic characteristics.

According to Hasançebi (2010), with respect to product characteristics, married individuals preferred organic produce more compared to unmarried individuals; apart from this, no significant differences were found in case of gender, age, and income. In spite of the inconsistency of findings of much research, Hughner et al. (2007) have indicated that, even if at times contradictory, some consistent results have also emerged across studies conducted on the demographic characteristics of organic food buyers throughout the world. Accordingly, females, older individuals, and households in which there are children tend to prefer organic food more compared to other groups.

On the other hand, Bellows et al. (2010) have also reviewed previous research in different countries and concluded that preference for organics is highest among middle-aged, wealthy, and highly educated females, in families with children, and with persons who care about health, environment, and animal welfare. Nevertheless, in Li et al.'s (2007) opinion, attitudes and behavior appear to be better measures of preferences than do the demographic variables and in this sense, cultural patterns seem to be far more useful to predict behavior and attitudes toward organic products (Gotschi et al., 2010).

### **3. Research Design and Methodology**

#### **3.1. Research Purpose and Design**

The purpose of this study is to examine the attitudes and self-reported behavior of Turkish consumers with respect to organic foods. As has been explained in the introduction part, it is quite important to study organic food considerations because of the potential they have, given also the fact that they offer healthy alternatives to humans as well as aid in restoring the misbalanced ecological life.

As such, the research questions for which answers are sought can be stated as follows:

- What is the frequency of Turkish consumers' organic food purchases?
- What are the reasons for purchasing organic food among Turkish consumers?
- What are the conditions under which Turkish consumers would buy more organic foods?
- What are the reasons of Turkish consumers for not purchasing organic foods?
- Are there significant differences in the frequency of organic food purchases of male and female respondents and with respect to different age categories, education levels, income levels, working status, marital status, and household composition (size of household and presence of 0 to 4 year-old and 5 to 17 year-old children at home)?
- Are there significant variations in the organic food purchase reasons of the above mentioned groups of respondents?
- Are there significant differences in the conditions under which the above mentioned groups would buy more organic foods?
- Are there significant differences in the reasons these groups give for not purchasing organic food?

#### **3.2. Data Collection Procedure and Instrument**

Data was collected through a structured and undisguised questionnaire distributed among consumers. Questions were developed upon a thorough analysis of relevant literature. A pilot study was carried out among 20 consumers to see if the questions were readily understood. Necessary changes were made in the wording of some questions before distributing the questionnaires for the actual study. The internal reliability of the questionnaire using the Cronbach's alpha coefficient was 0.96, which indicated a high internal correlation among the items. The content validity in meeting the objectives of the study was established on consultation with food engineers and the literature. It took an average of 10 to 15 minutes to answer the questions on the questionnaire.

#### **3.3. The Sampling Design**

This cross-sectional field study took place during the two months of July and August, 2011. The sample consisted of 500 individuals and was recruited by a local market research company. All of the participants gave their informed consent prior to their inclusion in the study. These individuals were over 18 years of age, lived in the socio-economically different districts of Istanbul, and did food shopping for themselves and/or their families. Within this frame, high, middle, and low income districts on the Asian and European sides of the city were chosen and the questionnaires were administered face to face with the respondents at their homes, by qualified interviewers. Random sampling was used in recruiting the respondents and the sample size was determined taking into consideration population densities of the districts representative of Istanbul as a whole. To enable maximum reach during the data collection process, no more than ten interviews were conducted in each neighborhood and a maximum of three contacts were established on each street in apartments that were not next to each other. The field process was first controlled by supervisors in the region and later more than 50% of respondents were rechecked to see if they had really been surveyed.

**Table 1 Sample Characteristics**

		Frequency	Valid %
Gender	Female	249	49.8
	Male	251	50.2
Age	18-24	115	23.0
	25-34	119	23.8
	35-44	113	22.6
	45-54	72	14.4
	55-64	60	12.0
	65 and above	21	4.2
Education	Literate	12	2.4
	Primary school	112	22.4
	Secondary school	65	13.0
	High school	199	39.8
	University	111	22.2
	Post graduate	1	0.2
Working status	Works	284	56.8
	Does not work	216	43.2
Income	0-500 TL	4	0.8
	501-1000 TL	57	11.4
	1001-1500 TL	101	20.2
	1501-2000 TL	100	20.0
	2001-3000 TL	102	20.4
	3001-5000 TL	66	13.2
	5000+ TL	15	3.0
	Did not reply	55	11.0
Marital status	Married	228	45.6
	Not married	272	54.4
Size of household	1	60	12.0
	2	62	12.4
	3	118	23.6
	4	136	27.2
	5 and more individuals	124	24.8
Presence of children younger than 5	No	423	84.6
	Yes	77	15.4
Presence of children aged 5-17	No	319	63.8
	Yes	181	36.2

Demographic characteristics of the respondents are presented in Table 1. Approximately, half of the respondents were female and the other half, male. About one fourth of the respondents were 18-24 years of age, one fourth were 25-34, another one fourth were 35-44, and the rest were over 44. With respect to education, literates made 2% of the sample; elementary school graduates were 22%, secondary school graduates were 13%, high school graduates were 40%, university graduates 22%, and post graduates were less than 1. In case of working status, full-time employment rate was 56% while those who did not work comprised 43% of the sample. Concerning income levels, one fifth of the respondents earned 1001-1500 TL, another one fifth, 1501-2000 TL, and still another one fifth, 2001-3000 TL, monthly. With respect to marital status, approximately 46% were married and 54% not married. 12% of the respondents lived alone, approximately, another 12% were 2 member-households, 24% were 3, 27% were 4, and the rest were 5 or more person-households. About 15% of the sample had children less than five years of age and an approximate percentage of 36 had children aged between 5 and 17.

### 3.4. Analysis of Data

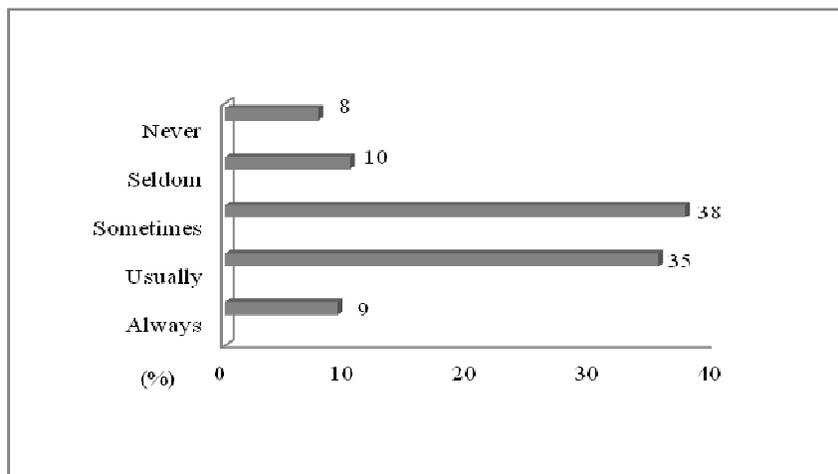
The analysis on the 500 questionnaires, inclusive of the descriptive statistics and the relevant tests to investigate the various relationships and differences sought among the variables included in the study, was completed by using the computer program SPSS (Statistical Package for the Social Sciences).

## 4. Findings

### 4.1. Descriptive results

Organic food purchase frequency is revealed in Figure 1, where 9% of the respondents have indicated that they ‘always’ purchased organic food; this percentage was 35 in case of ‘usually’, 38 in case of ‘sometimes’, 10 in case of ‘seldom’, and 8 in case of ‘never’ responses. (Figure 1).

**Figure 1 Frequency of Organic Food Purchases**



The most important reason for organic food purchases seems to be “health” (health of the self and/or the family) (92% agreement rate), followed by “protection of natural resources for the coming generations” (88% agreement rate), “support for organic agriculture and sustainability” (87.4% agreement rate), “food safety” (86% agreement rate), and “support for the local/small farmer (85% agreement rate). Among the cited reasons, the relatively lower agreement rates belong to “animal welfare considerations used in production” (16.4% disagreement rate) and “less environmental pollution in production” (14.6% disagreement rate), eventhough the agreement rates for these items are quite high by themselves, as well. (79.8% in case of the former and 81.6% in case of the latter). “Higher in quality”, “fresher”, and “more delicious” options are the least known reasons among the respondents with 9.6%, 9.6%, and 9.4% “do not know/no idea” replies, respectively. (Table 2).

**Table 2: Reasons for Purchasing Organic Products**

n=500 (%)	Certainly agree	Agree	Disagree	Certainly disagree	Does not know / Has no idea
Healthier x=3.17; med.=3.00; mode=3; sd=.780	31.0	61.0	4.2	1.2	2.6
Safer x=3.06; med.=3.00; mode=3; sd=.829	27.4	58.6	9.8	1.2	3.0
Animal welfare x=2.97; med.= 3.00; mode=3; sd=.925	27.6	52.2	14.0	2.4	3.8
Less environmental pollution x=2.96; med.= 3.00; mode=3; sd=.903	24.4	57.2	11.8	2.8	3.8
More tasteful x=2.91; med.= 3.00; mode=3; sd=1.116	29.6	51.4	9.2	0.4	9.4
Fresher x=2.88; med.= 3.00; mode=3; sd=1.096	25.6	56.8	7.6	0.4	9.6
Higher in quality x=2.90; med.= 3.00; mode=3; sd=1.127	29.6	51.0	9.2	0.6	9.6
Supports local farmers x=3.03; med.= 3.00; mode=3; sd=.903	27.8	57.2	8.8	2.2	4.0
Supports organic agriculture and sustainability x=3.10; med.= 3.00; mode=3; sd=.834	30.6	56.8	8.8	0.6	3.2
Protection of natural resources for the coming generations x=3.10; med.= 3.00; mode=3; sd=.859	30.6	57.4	7.0	1.6	3.4

x=mean; med.=median; mode=mode; sd=standard deviation

High price of organic foods seems to be, by far, the top reason for not purchasing them (85.8% agreement rate). The next is their lack of availability, 61.2% of the respondents have mentioned that organic foods were not widely available in the market. Those who complained about the insufficient variety of organic produce in the market made up of 49% of the sample. Again, 47.4% have reported that “it took a long time to find organic foods”. In case of the other ‘failure to purchase’ reasons indicated in the question, agreement rates were below 40%, meaning more than 50% disagreement rates: “I do not think organic foods are that high in quality”(39.2% agreement rate), “I am not sure if they offer something different than products that are not organic” (36.4% agreement rate), “their tastes are not that delicious compared to products that are not organic” (36.0% agreement rate), and “they look less appetizing than products that are not organic” (34.2% agreement rate). (Table 3).

**Table 3:** Reasons for Not Purchasing Organic Products

n=500 (%)	Certainly agree	Agree	Disagree	Certainly disagree	Does not know / Has no idea
There is not enough organic product variety x=2.43; med.=2.00; mode=2; sd=1.113	18.2	30.8	34.0	9.8	7.2
They are not widely available in the market x=2.56; med.=3.00; mode=3; sd=1.016	13.6	47.6	26.8	5.2	6.8
They are expensive x=3.00; med.=3.00; mode=3; sd=1.043	30.6	55.2	5.6	1.0	7.6
I do not think them to be that high in quality x=2.20; med.=2.00; mode=2; sd=1.068	11.0	28.2	38.0	15.2	7.6
Their tastes are not that delicious compared to products that are not organic x=2.16; med.=2.00; mode=2; sd=1.037	9.6	26.4	41.8	14.6	7.6
Their appearance is less appealing compared to products that are not organic x=2.16; med.=2.00; mode=2; sd=1.001	9.0	25.2	46.0	12.6	7.2
I am not sure if they offer something different than products that are not organic x=2.16; med.=2.00; mode=2; sd=.970	6.0	30.4	44.4	11.6	7.6
It takes a long time to find organic products x=2.30; med.=2.00; mode=3; sd=1.068	10.2	37.2	33.6	10.4	8.6

x=mean; med.=median; mode=mode; sd=standard deviation

With respect to conditions under which individuals would be willing to purchase organic foods more, 86.2% of the respondents either “agreed” or “strongly agreed” that they would do so if organic foods were less expensive while 78.8% said that they would buy organic foods more if they could find them more readily in the market. 75.8% of the respondents would buy more if they had higher income while 75.2% and 74% would do so if “more informative advertisements could be made” and “more information was given in the media”, respectively. In case of the statements “if it could be trusted that they were actually produced organically”, “if more could be known about organic products and logos”, and “if they were more durable”, an approximate of 72% agreement rate was obtained for each. In this question, more than 25% disagreement rate was obtained in case of their appearance (“if their shapes looked better”)(35.8%), product variety (“if there were more product variety”)(29%), taste (“if they were more delicious”)(27.4%), and time (“if I had more time to search for them”)(27.4%), meaning that, relatively speaking, people are not that keen on these considerations. No one “agreed” or “strongly agreed” with the statement that they “would never consider buying organic foods under any circumstances”. (Table 4).

**Table 4: Conditions Under Which Individuals Would be Willing to Purchase Organic Products More**

n=500 (%)	Certainly agree	Agree	Disagree	Certainly disagree	Does not know / Has no idea
If they were less expensive x=3.07; med.=3.00; mode=3; sd=.910	30.6	55.6	7.6	2.2	4.0
If I had more income x=2.90; med.=3.00; mode=3; sd=1.077	30.0	45.8	15.0	2.2	7.0
If I could find them more readily in the market x=2.95; med.=3.00; mode=3; sd=.944	27.0	51.8	14.2	3.0	4.0
If there were more product variety x=2.71; med.=3.00; mode=3; sd=.989	19.0	48.2	21.0	8.0	3.8
If their shapes looked better x=2.63; med.=3.00; mode=3; sd=.964	17.0	43.6	28.8	7.0	3.6
If they were more delicious x=2.72; med.=3.00; mode=3; sd=1.013	20.4	48.2	18.6	8.8	4.0
If I had more time to search for them x=2.75; med.=3.00; mode=3; sd=.984	20.8	47.6	21.8	5.6	4.2
If I could know about organic products and logos better x=2.82; med.=3.00; mode=3; sd=.933	21.8	49.8	20.8	4.2	3.4
If I could trust that they were actually produced organically x=2.81; med.=3.00; mode=3; sd=.957	21.8	50.0	19.2	5.4	3.6
If they were more durable x=2.77; med.=3.00; mode=3; sd=.969	19.6	52.0	18.4	5.8	4.2
If more information was given in the media x=2.85; med.=3.00; mode=3; sd=.943	22.8	51.2	17.6	5.0	3.4
If more informative advertisements could be made x=2.85; med.=3.00; mode=3; sd=.947	22.0	53.2	15.8	5.4	3.6
I do not consider buying organic products under any circumstances x=1.38; med.=1.00; mode=1; sd=.544	--	--	40.8	56.2	3.0

x=mean; med.=median; mode=mode; sd=standard deviation

**4.2. Results supported by statistical tests (with respect to the demographic variables)**

Since all of the variables used in the study were found to be non-normally distributed, non-parametric tests were used (Mann-Whitney, Kruskal-Wallis). The Mann-Whitney U Test was used to test for significant differences in case of “gender”, “working status”, “marital status”, “presence of children aged 0 to 4”, and “presence of children aged 5 to 17”; the Kruskal-Wallis Test was used in case of “age”, “education”, “income”, and “size of household” so as to be able to reveal the significant variations across the respective groups’ attitudes and behavior with respect to organic foods.

Findings related to the analyses of demographic variables are as follows:

With respect to organic food purchase frequency, there is no statistically significant difference between respondents across the variables of “gender”, “age”, “education level”, “income level”, “working status”, “marital status”, “household size”, and “child ownership” ( $p > .05$  in all of the relevant analyses). With respect to reasons for purchasing organic foods, there is a difference between males and females in case of two instances: Females think to a greater extent than males that organic foods are “more delicious” ( $p = .038$ ;  $z = -2.072$ ) and “higher in quality” ( $p = .035$ ;  $z = -2.103$ ). In case of age, there is only one statistically significant difference across the different age groups and it pertains to “food safety” ( $p = .002$ ;  $\lambda^2 = 18.941$ ). Upon completion of separate pair-wise Mann Whitney U Tests followed by the Kruskal Wallis Test for all age groups, it can be said that those above 55 years of age think to a greater extent than younger respondents that organic foods guarantee their food safety.

There are no statistically significant differences among respondents across different education levels, income levels, working status, marital status, household size, and child ownership with respect to reasons for organic food purchases.

There are no significant variations among females and males and across respondents with different education levels, household size, and 5 to 17 year-old-child ownership for not purchasing organic food. In case of age, again an analysis of pairwise age categories with the Mann-Whitney U Test after the initial Kruskal Wallis Test revealed that those who are 55 years and older think to a greater extent than younger respondents that “there is not enough organic product variety”. Besides this, these respondents also think to a greater extent than those who are 18-24 and 25-34 years of age that “tastes of organic food products are not that delicious compared to products that are not organic”. With respect to income, compared to other groups, the lowest income (less than 500TL) consumers tend not to buy organic products, at all. With respect to working status, those respondents who do not work think to a greater extent than those who work that organic products are not very widely available in the market ( $p=.018$ ;  $z=-2.371$ ). With respect to marital status, married respondents believe to a greater extent than unmarried respondents that “there is not enough organic product variety” ( $p=.018$ ,  $z=-2.376$ ) and that “they do not think organic foods to be that high in quality” ( $p=.041$ ;  $z=-2.039$ ). With respect to 0 to 4 year-old child ownership, those who have a small child at home believe to a greater extent than those who do not have that “it takes a long time to find organic products” ( $p=.001$ ;  $z=-3.204$ ).

The only statistically significant difference between males and females with respect to the conditions under which more organic foods would be purchased is the statement, “if I could know more about organic products and logos better”. Females tend to think to a greater extent than males that “they would buy more if they had more knowledge about organic products and logos” ( $p=.004$ ;  $z=-2.877$ ). There are no statistically significant differences in the conditions under which more organic food would be purchased with respect to respondents across different education levels, household size, and 5-17 year-old child ownership. In case of age, pair-wise Mann Whitney U Tests were conducted upon the Kruskal Wallis Test result which indicated statistically significant differences across the different age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65 and above). Accordingly, those respondents above 45 years of age seem to think to a greater extent than the younger age groups that they would buy more organic food “if they were more delicious”. On the other hand those aged between 55-64 would buy more compared to younger ones “if they had higher income”. Besides, this group would also buy more compared to the 18-44 year age categories “if they could know about organic food and logos better” and “if they were more durable”.

In case of income, again the pair-wise Mann Whitney U Test results conducted after the Kruskal Wallis Test revealed that 1501-2000 TL income owners would be willing to purchase organic food more compared to all other income categories (501-1000, 1001-2000, 2001-3000, 3001-5000) – excluding the 5000TL and above category, “if they looked more pleasing”. In case of working status, those who do not work seem to think to a greater extent than those who work that they would buy organic foods more “if they could know about organic products and logos better” ( $p=.048$ ,  $z=-1.975$ ). In case of marital status, those who are married think to a greater extent than those who are not, that they would purchase organic foods more “if they had higher income” ( $p=.011$ ,  $z=-2.529$ ), “if organic foods were more delicious” ( $p=.018$ ,  $z=-2.356$ ), “if they had more time to search for organic food” ( $p=.019$ ,  $z=-2.343$ ), “if they could trust that they were actually produced organically” ( $p=.049$ ,  $z=-1.973$ ), and “if more information could be provided by the media” ( $p=.012$ ,  $z=-2.527$ ). Those who have a child/children aged between 0 and 4 tend to think to a greater extent than those who do not that they would purchase organic food more “if they looked more pleasing” ( $p=0.037$ ,  $z=-2.090$ ), “if more information could be provided by the media” ( $p=.027$ ,  $z=-2.215$ ), and “if there were informative advertisements on organic foods” ( $p=.019$ ,  $z=-2.354$ ).

## **5. Conclusions and Implications**

Turkish consumers' attitudes and self-reported practices regarding organic foods were assessed in this study. 9% of the respondents indicated that they “always” purchased organic foods; 35% did so “usually”, 38% “sometimes”, and 10% “seldom”. The percentage of those who stated that they “never” purchased organic food was 8. This finding points out to the fact that about one fifth of the respondents either do not buy organic foods at all or buy them very infrequently. High price of organic foods seems to be, by far, the top reason for not purchasing them. Besides the price consideration, their lack of availability also seems to be a major barrier to organic food purchases.

For the rest of the cited reasons (“there is not enough product variety”, “it takes a long time to find organic foods”, “organic foods are not that high in quality”, “they do not offer something different than products that are not organic”, “their tastes are not that delicious”, and “they look less appetizing”), it is seen that the agreement rates are relatively lower, meaning that they are not as influential in leading people not to buy organic food.

Among the cited reasons for purchasing organic foods, “health of the self and/or the family” ranks the first followed by “protection of natural resources for the coming generations”, “support for organic agriculture and sustainability”, and “food safety”. Surprisingly, “environmental pollution” and “animal welfare” considerations used in production, which, in earlier studies have been found to be among the top reasons for buying organic foods, come only after the above mentioned reasons. It is important to realize that the society should somehow be informed about the positive impact of organic food production on the environment and on animal welfare; this will surely increase consumption of organic foods, to an extent. Hence, on the part of food marketers, it would be a sound marketing strategy to communicate the specific food quality attributes of organic products (Stolz et al., 2010), pointing out to these two aspects, as well.

With respect to conditions under which individuals would be willing to purchase organic products more, parallel to the above finding related to prices, the highest agreement rate was obtained for the statement: “if they were less expensive”. In line with the reasons given for not purchasing organic foods and also earlier research, price seems to be a major consideration for a majority of people. To deal with the price obstacle, “the perceived price-performance ratio of organic products (may) be increased through the use of suitable communication and pricing strategies” (Stolz et al., 2010, p. 71). On the other hand, if individuals get to know more about organic foods, it is highly probable that both non-users will begin consuming them and existing users will increase their level of consumption (Gracia and Magistris, 2008). Furthermore, if consumption increases, availability of organic foods will also increase due to consumers asking for organic food from producers/retailers, decreasing costs and prices, in turn. Therefore, even if the results cannot be obtained in the short-run, continuous education of consumers regarding organic foods and their benefits is of prime importance as “the future of organics will be very much dependent on the motivations of consumers” (Smith and Paladino, 2010, p.94). Above 75% agreement rates were obtained in case of the statements: “if organic foods could be found more readily in the market”-again, pointing out to the availability dimension-, “if respondents had higher income”, and “if more informative advertisements could be made”.

About three fourths of respondents indicated that they would buy organic foods more, “if more information was given in the media”, “if it could be trusted that they were actually produced organically”, “if more could be known about organic foods and logos”, and “if they were more durable”. It may be advisable for “food producers and regulatory agencies (to) focus on the naturalness of organic products and raise confidence in the organic label” (Pino et al., 2012, p.167), so as to increase regular purchases and improve trial chances by non-purchasers. Besides, the media, especially television, may be used to the greatest possible extent to educate consumers with respect to organic foods and logos through both the use of programs and informative advertisements. The least “agreed to” statements were “if their shapes looked better”, “if there were more product variety”, and “if they were more delicious”, where more than 25% disagreement rates were obtained. Together with the reasons given for not purchasing organic foods, it may be concluded that individuals are not that concerned with the cosmetic quality and taste of organic foods and also with their limited variety. Findings related to the analyses of demographic variables revealed that there is no statistically significant difference between respondents with respect to their education levels, household size, and ownership of 5 to 17 year old child/children in case of their organic food purchase frequency, their reasons for purchasing and not purchasing organic foods, and the conditions under which they would be willing to purchase organic foods more.

Gender-wise, females think to a greater extent than males that organic foods are more delicious and that they are higher in quality compared to foods that are not organic. Besides, females have also indicated that they would buy organic foods more if they had more knowledge of organic foods and logos. With respect to age, respondents older than 55 believe to a greater extent than younger ones that organic foods guarantee their food safety and that there is not enough organic food variety on the market. Furthermore, they also believe to a greater extent than respondents who are aged between 18 and 34 that tastes of organic foods are not that delicious compared to products that are not organic. Those over 45 have indicated to a greater extent than younger respondents that they would buy more if organic foods were more delicious.

Comparison of the 55-64 year-olds with younger ones revealed that the former group thought to a greater extent than the latter that they would purchase organic foods more if they had higher income. The last statistically significant difference pertaining to age was related to those who were 55 to 64 versus those who were 18 to 44: The older group thought to a greater extent than the younger that they would buy organic foods more if they could know about organic foods and logos better and if these food items were more durable. Coming to income, those with the lowest level of income (less than 500TL per month) tend not to buy organic foods, at all. Those who have a monthly income of 1501 to 2000TL have indicated that they would be willing to purchase organic foods more compared to the other groups (excluding the 5000TL and over earners) if they looked more pleasing. With respect to working status, those who do not work seem to think to a greater extent than those who work that organic foods are not very widely available in the market and that they would buy more if they could know about organic foods and logos better. With respect to marital status, those who are married tend to think to a greater extent than those who are not that there is not enough organic food variety, that organic foods are not that high in quality, and that they would purchase more if they had higher income, if organic foods were more delicious, if they had more time to search for organic foods, if they could trust that they were actually produced organically, and if more information could be provided by the media.

Those who have a child or children aged between 0 and 4 think to a greater extent than those who do not that it takes a long time to find organic foods, that they would purchase more if they looked more pleasing, if more information could be provided by media, and if there were informative advertisements on organic foods. Although the above cited statistically significant differences with respect to the studied variables were not numerous in number so as to present us clear pathways to follow, from the foregoing, it can be seen that different groups of consumers have different opinions about and attitudes toward organic foods. As such, specific concerns of each consumer group should be addressed separately by producers/retailers and different communication programs should be developed for each. Apart from an analysis of demographic variables, however, in a later study, it may prove to be fruitful to make use of psychographics (Hamzaoui-Essoussi and Zahaf, 2012) so as to have better insight into peoples' organic food purchase motives through a focus on their values, attitudes, and lifestyles (Hughner et al., 2007) and to adapt marketing strategies accordingly.

Besides the above mentioned suggestions, measures to support the development of organic farming should be put into effect at the policy level and producers should also be assisted both during the production and distribution stages. The main limitation of the study is that self-reported behaviors rather than actual behaviors were studied which may present social-desirability bias. Hence, in future research, actual behaviors may be observed, as well. Even if this study is specific to the Turkish market, its findings and implications may shed some light to future researchers in other countries, especially where organic agriculture and foods are still in their infancy.

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