

## Factors Affecting Consumers' Consumption of Organic Foods: A Case Study in GAP-Şanlıurfa in Turkey

M. H. Aydogdu<sup>1\*</sup>, and F. Kaya<sup>1</sup>

### ABSTRACT

This study aimed at evaluating the reasons affecting organic food consumption of consumers in GAP-Şanlıurfa of Turkey. The sample size was determined using a 95% confidence interval and 382 questionnaire interviews were conducted. The participants were selected among the organic food consumers using a simple random sampling method. The Likert attitude scale, Mann-Whitney U and Kruskal-Wallis tests were used for analysis. It was observed that the existing knowledge and publicity about organic foods were insufficient; the main source of information was the internet. The consumers prefer to buy organic foods directly from the producers and there is a need for the organic bazaar. The fresh fruits and vegetables have a consumption frequency of 74.1%, followed by milk and milk products with 56%. The most important reason for consumption is being hormone-free, as shown by 93.7% of respondents, followed by odor-taste and flavor, with 92.7%. Color-appearance-packaging ranked last in terms of importance. The education level, followed by income, occupation, gender, marital status, age, settlement location and number of household members, are reasons that significantly explain the consumption behaviors. This study is one of the first of its kind in the GAP-Şanlıurfa. The results are important for agricultural producers and policymakers concerning agricultural production, marketing, and rural development.

**Keywords:** Consumer behavior, Consumer preferences, Organic agricultural products, Organic bazaar.

### INTRODUCTION

Rapid population growth leads to an increase in urbanization, which, in turn, results in a decrease in cultivated lands. Natural resources are adversely affected by urbanization and industrialization, respectively, resulting in pollution of air, water, and soil (Gök, 2008), which are essential for agricultural productions. These two basic factors, i.e. urbanization and industrialization, often lead to a reduction in agricultural production capacity, quantity and sometimes quality of output. The result is that there are genuine concerns about food and food safety across the globe. Although there are many other factors capable of

adversely affecting food production, urbanization and industrialization are the most significant (Kaya *et al.*, 2016). However, the need to boost food production to meet the needs of the growing population has led to an increase in the use of chemicals and pesticides in agricultural productions. Uncontrolled use of these kinds of artificial inputs has begun to spread alongside technologies. Consequently, the conditions of natural resources are deteriorating, as are the chemical residual leftovers on the resources and the agricultural products (Kaya *et al.*, 2016). Today, the majority of the food produced by plants using artificial input cannot be said to be healthy. This may result in foodborne illnesses that cause

<sup>1</sup>Department of Agricultural Economics, Agricultural Faculty, Harran University, Şanlıurfa, 63300, Turkey.

\*Corresponding author; e-mail: mhaydogdu@harran.edu.tr



anxiety on the consumers. In general, the level of concern about food safety among the consumers has increased and their concern is mainly about chemicals with pesticide residues (Brewer and Rojas, 2008). Based on consumers' preferences and concerns, increasing differences in food demands are becoming noticeable. Many recent studies have shown that the consumers feel their food is less safe, compared to what it used to be (Tucker *et al.*, 2006; Mutlu, 2007; Brewer and Rojas, 2008; Mukul *et al.*, 2013).

Concerns about food quality and safety divert the consumers to organic agricultural products. Organic agriculture can be considered as a system of food production that tries to reduce the use of external inputs and optimize outputs for the sustainability of ecosystems (Jaradat, 2015); it does not contain synthetic inputs such as pesticides, herbicides, chemical fertilizers, and growth hormones. Organic foods are produced from organic agriculture that is not processed using irradiation, industrial solvents, or chemical food additives (Mukul *et al.*, 2013). The consumption of organic agricultural food is not only important for health, but also for organic farming, which is one of the fastest-growing sectors. Furthermore, by using their resources more efficiently, in support of rural development and employment, organic agriculture brings in more profit for agricultural producers (Laux, 2013; Tamuliene and Mazrime, 2014), while protecting the ecosystem. Lastly, organic agriculture can be considered a tool to solve problems arising from climate change (Jaradat, 2015). There is an increasing demand for organic foods all over the world, especially in developed countries (Hughner *et al.*, 2007, Arslan and Ersun, 2011, Laux, 2013). On the other hand, many countries also face high price and availability problems (Petrescu *et al.*, 2017). Although organic food consumption has a share of over 2% of the total food market, the global sales of organic food and drink have reached a staggering \$80 billion in 2014 and to approximately \$90 billion in

2017 (The World of Organic Agriculture, 2019). Despite this global growth in consumer demand and sales, the organic food market is still relatively small (Hughner *et al.*, 2007).

Turkey is one of the leading producers of organic foods in Europe and the world (Gürses, 2014). It is estimated that approximately 95% of total organic agricultural products have been exported from Turkey at a value of \$78.8 million in 2014 (Sandallioglu, 2014) and \$215.3 million in 2017 (Tarım Orman Bakanlığı, 2019). Despite the high production potential of organic agriculture in Turkey, revenues are lower than the world average. The Southeastern Anatolia Project (GAP, in its Turkish acronym) area is located in the South-Eastern part of Turkey and it is the most important regional development project of the country, mainly based on water and soil resources. The country also possesses 22 dams, 19 hydroelectric power plants, and irrigation of 1.822 million ha of agricultural land (Aydogdu *et al.*, 2015). The GAP is aimed at using available natural resources to increase the income level and life quality of the citizens and contributing to the economic and social development. The agricultural land in the organic agriculture program was 36,654 ha in the GAP Region and 58.9% of it is in Şanlıurfa in 2016 (GAP, 2016). Şanlıurfa had 1.18 million ha of agricultural land and a population of 2.035 million in 2018 (GAP, 2019). The socioeconomic features of Şanlıurfa are equal to those of many provinces in Turkey combined. Şanlıurfa is the 8th largest city in Turkey in terms of population. On the other hand, there is no bazaar where organic products are sold regularly, but the potential of organic agriculture is high in Şanlıurfa where the main livelihood is agriculture. The purpose of this research was to evaluate the reasons affecting the consumption of organic agricultural products by consumers in GAP-Şanlıurfa of Turkey. Knowing the reasons affecting consumer preferences would determine organic agricultural production

policies in GAP-Şanlıurfa. This will be of benefit for both the consumers and the producers. The producers will be able to produce according to the consumer preferences and the consumers will have access to the products they demand. This may lead to the formation of an organic product bazaar in Şanlıurfa. Also, it will contribute to the evaluation of the agricultural potential of GAP-Şanlıurfa, which would become more competitive in organic products. This will positively affect producers, consumers and social welfare in many ways. The results of this study would contribute positively to the National Action Plan for Organic Agriculture in Turkey's 10th Development Plan, too. Although various studies have been conducted on organic agricultural products to date, almost no studies have been conducted in Şanlıurfa on consumer behaviors and the reasons affecting these behaviors. This research is the first one of its type for Şanlıurfa.

## MATERIALS AND METHODS

The basic materials of this research come from consumers of organic agricultural products aged 18 years and above living in the three central districts of Şanlıurfa city center. The sample size was determined by the formula of Yamane (2001), with a 95% confidence interval and 382 questionnaire interviews were conducted in 2015. The participants were selected among the voters by using a simple random sampling method and asking whether they consumed organic agricultural products or not. The surveys were conducted with organic product consumers. The Likert attitude scale, Mann-Whitney U and Kruskal-Wallis tests were used in SPSS. Likert scale is extensively used by the researchers to define perceptions, behaviors, attitudes, and expectations of the group about the researched topic and 85% confidence level is accepted in general (Aydogdu *et al.*, 2015). The Mann-Whitney U test is a nonparametric method that analyzes the

differences between two groups from the same population on an ordinal variable without any specific distribution, unlike t-test. It is almost as effective as the t-test on normal distributions (Kerby, 2014; Kalayci, 2014). The Kruskal-Wallis test is a nonparametric test for testing whether samples originate from the same distribution for comparing three or more independent variables of equal or different sample sizes on a continuous dependent variable for evaluation of significant differences within them by mean ranks. Kruskal-Wallis test extends the Mann-Whitney U test in case of the existence of three or more groups and indicates that at least one sample stochastically dominates another sample (Corder and Foreman, 2009; Alpar, 2013; Kalayci, 2014).

## RESULTS AND DISCUSSION

Studies have shown that different socioeconomic groups differ in their consumption behaviors and these differences partly arise from inequalities among social groups (Turrell, 1998). The variables were selected in accordance with the socioeconomic structure of individuals about the researched topic. Şanlıurfa city center is composed of three sub-districts, namely, Karaköprü and Haliliye, where individuals of middle-and upper-income levels reside, and Eyyübiye, where people of middle and lower-income level reside. The frequencies and descriptive statistics of the variables used in the research are given in Table 1.

During the interviews with the consumers, it was observed that the consumers were not informed sufficiently about organic agricultural products and that the consumers mostly followed the issue over the internet and preferred to buy directly from the producers. 71.8% of the participants stated that information about organic products was not given enough importance and 59.1% of the participants knew the organic products logo. Participants preferred organic products to be sold in public-controlled bazaars by

**Table 1.** The frequencies and descriptive statistics of the research sample.

Variables	Definition (The consumer)	Std	
		Mean	deviation
Gender	If the consumer is female 1 (30.6%), male 2 (69.4%)	1.69	0.462
Age	If the age between 18-29 is 1 (12.0%), between 30-39 is 2 (25.1%), between 40-49 is 3 (23.4%), between 50-59 is 4 (24.1%), 60 years old and over is 5 (15.4%)	3.06	1.262
Marital Status	If single 1 (7.9%), married 2 (67.5%), widowed 3 (24.6%)	2.17	0.545
Household	The number of children in the family	3.18	0.956
Education	If graduated from primary school 1 (1.6%), graduates from high school 2 (8.9%), graduates from university 3 (68.1%), postgraduate education 4 (21.4%)	3.09	0.599
Occupation	If inactive (house wife, student etc.)/unemployed 1 (11.8%), public servant 2 (32.2%), private sector employees 3 (46.3%), self-employment 4 (9.7%)	2.54	0.824
Income	If the monthly income is 1000 Turkish Lira (TL) and below 1 (6.8%), between 1001-2500 TL 2 (37.7%), between 2501-4000 TL 3 (42.4%), 4001 TL and above 4 (13.1%)	2.62	0.797
Settlement	If the consumer resides in Karaköprü 1 (30.6%), Haliliye 2 (36.7%), Eyyübiye 3 (32.7%)	2.02	0.797

64.6%. A study conducted in the same research area concluded that only 4.7% of the participants were sufficiently informed and the internet had the highest rate of 41.4% among the information sources and that the consumers preferred to buy organic products by 30.6% directly from the producers which was the highest rate and the by 2.1% from the internet which was the lowest rate Kaya *et al.*, 2016). The influence of media on individuals' attitudes, perception, and preferences are important. Consumers' level of perceptions increases on a subject, particularly when fuelled by intense media coverage (Tucker *et al.*, 2006), and new media has become widely used based on demand through the Internet (Anonymous, 2016). These tools can be used effectively in promotion and information. There is no organic agricultural

products bazaar or organic sale shops in the researched area. A study conducted in Romania, it was found that availability influenced consumption (Petrescu *et al.*, 2017). The consumers prefer to shop by seeing, selecting, and touching the items based on the social and cultural structure in the research area. During the survey, it was realized that the consumers did not consider shopping on the internet as trustworthy, despite their keen interest in information from the Internet. The share of e-commerce was 10.2% in total retail sales in the world, while this rate was only 4.1% in Turkey in 2017, which is less than the average of both the world and developing countries (TUBISAD, 2018). These data confirm field observations during the survey.

The consumption frequency of organic products of the participants is given in Table 2.

According to the results, fresh fruits and vegetables, followed by milk and dairy products have more consumption frequency as compared to the others. Taste influenced consumers' willingness to eat seasonal fruits and vegetables (Tobler *et al.*, 2011). On the other hand, milk and dairy products are of great importance to health. The study area has great potential for the production of these products. Spice consumption is ranked last. The most consumed spices in the research area are dried red pepper and dried mint. Due to the socio-cultural structure of the community, consumers prefer to produce these products by themselves instead of buying. Since artificial external inputs are not used for organic productions, the organic products are less colorful and less attractive in appearance and packaging when

compared to conventional products. On the other hand, their smells, tastes, and flavors are better with high nutritional value and without hormones. In this sense, the results shown in Table 2 are consistent. Some selected statements for the reasons, assuming that they are important at the organic product preferences, were given to the participants and asked to mark their degree of participation in the given statements and the results are presented in Table 3.

According to the results, the most important statement for the consumers' reasons for preference (93.7%) was hormone-free, followed by odor-taste and flavor (92.7%). Color-appearance-packaging was ranked last in terms of importance for the reasons. The results are consistent with expectations. The consumers' mean rank of the test results of the effective statements for the reasons used in determining the choice

**Table 2.** The consumption frequency of organic agricultural products of the participants.

Consumption frequency (%)	Very high	High	Average	Low	Very Low
Fresh fruit and vegetables	45.0	29.1	17.3	7.6	1.0
Dried nuts and fruits	9.4	22.3	30.4	25.9	12.0
Legumes	12.6	25.4	25.1	23.6	13.4
Milk and dairy products	31.7	24.3	20.4	17.3	6.3
Fruit juices	16.2	19.6	23.6	26.7	13.9
Spices	11.8	17.8	22.3	29.3	18.8

**Table 3.** The participants' percentage of participation in the given statements for reason to prefer organic product.

Given Statements (GS, %)	Very important	Important	Average	Less important	Unimportant
Color-appearance-packaging (GS1)	40.6	30.9	19.6	6.0	2.9
Odor-taste and flavor (GS2)	72.0	20.7	5.2	1.8	0.3
Label-certificate of reliability (GS3)	55.0	28.8	12.0	2.1	2.1
Food safety and no additives (GS4)	65.4	24.1	6.8	2.1	1.6
Hormone free (GS5)	78.0	15.7	4.2	1.6	0.5
Nutrition value (GS6)	60.5	25.7	11.5	1.6	0.8



of organic products based on groups and variables are given in Table 4 and Kruskal-Wallis test results are given in Table 5.

The statistically significant differences will be interpreted according to the test results of the Kruskal-Wallis based on the sub-groups in the variables. There are statistically significant differences among sub-groups in terms of gender ( $P < 0.05$ ) for the statement of GS3, that is, label-certificate of reliability, and GS5, that is, being hormone-free, and GS6, that is, nutrition value, in Table 5. In a study conducted in Romania, the label certificate was found to be effective in the consumption of organic products (Petrescu-Mag *et al.*, 2016). These significant differences are due

to the female respondents according to the mean rank values in Table 4. The female participants have a more positive approach compared to their male counterparts. Food shopping and cooking are done mainly by females in Şanlıurfa, which has a patriarchal family structure. Some studies show that females are more prone to buying organic foods due to the fact that they are often more concerned about family health matters than their male counterparts (Davies *et al.*, 1995; Zanolli *et al.*, 2004; Radman, 2005; Hofmann, 2006; Mutlu, 2007; Yi, 2009; Curl *et al.*, 2013). A study result shows that gender is effective in the awareness of organic food in the United Arab Emirates (Muhummad *et al.*, 2016). On the other

**Table 4.** The mean rank results of the statements for the reasons in the consumers' choice.

Variables	Sub-groups	GS1	GS2	GS3	GS4	GS5	GS6
		Mean rank					
Gender	Female	199.34	194.06	209.60	194.90	205.32	206.43
	Male	188.04	190.37	183.51	190.00	185.40	184.91
Age	18-29	190.51	204.37	204.04	198.76	209.33	207.18
	30-39	199.45	201.72	204.39	191.83	202.48	200.82
	40-49	197.31	188.78	178.86	190.07	191.46	192.46
	50-59	180.64	185.12	192.80	205.98	195.09	183.76
	60 and over	187.51	178.90	177.79	164.87	169.81	174.73
Marital Status	Single	192.20	202.05	202.97	223.30	209.63	199.58
	Married	191.85	189.57	192.93	190.56	187.86	181.38
	Widowed	190.32	193.43	183.90	183.93	195.71	216.69
Number of Household	2	189.37	194.76	201.94	208.99	196.82	203.60
	3	199.62	185.54	184.55	183.74	188.30	174.41
	4	175.90	193.99	190.33	188.64	192.25	195.52
	5	233.13	233.20	222.63	189.10	207.10	197.97
	6	201.20	156.50	154.20	163.70	153.20	267.00
Education Level	Primary school	139.92	177.75	197.50	119.83	167.50	188.50
	High school	205.88	167.68	149.91	134.06	164.41	149.97
	University	188.46	189.82	190.78	193.18	189.38	190.64
	Postgraduate	198.96	207.70	210.60	215.22	211.21	211.65
Occupation	Inactive/Unemployed	213.79	202.37	208.48	154.88	202.79	218.90
	Public servant	170.84	187.70	186.21	199.87	202.89	182.98
	Private sector employee	200.24	189.48	194.60	198.98	187.29	198.23
	Self-employment	191.26	200.61	173.64	172.42	160.04	202.14
Income	1000 and less (Gr.1)	203.98	193.54	197.96	176.96	203.92	211.79
	1001-2500 (Gr.2)	190.29	200.81	184.00	201.07	201.40	205.01
	2501-4000 (Gr.3)	186.64	178.71	192.43	189.96	189.51	184.66
	4001 and more (Gr.4)	204.23	205.07	206.72	176.48	162.98	164.21
Settlement	Karaköprü	211.12	196.00	188.00	190.08	192.79	180.86
	Haliliye	177.21	184.36	185.54	179.12	188.33	197.68
	Eyyübiye	189.15	195.28	201.46	206.69	193.84	194.54

hand, another study concluded that gender has no significant influence on food choice, where food purchase and preparation have been shared in Scotland (Kremmer *et al.*, 1998).

In the case of age variable within the group, the GS5, i.e. hormone-free, had statistically significant differences ( $P < 0.05$ ) and GS4, i.e. food safety with no additives, had marginally significant differences ( $0.05 < P < 0.10$ ). The significant differences arise from the respondents who are between the ages of 50-59 years within the age group. As they get older, individuals begin to worry more about their health and become more selective about food in the researched area. Age is an important indicator of consumption behaviors and effective on awareness about organic food and consumption (Gürses, 2014; Amirnejad and

Tonakbar, 2015; Muhummad *et al.*, 2016). On the other hand, many studies concluded that there were no evident significant relationships between age and organic food consumption (Davies *et al.*, 1995; Zanolli *et al.*, 2004; Radman, 2005; Yi, 2009). The relationship between age and consumption varies, depending on the countries. Sometimes, it varies even within the same country at different times and places. A study in the UK showed that organic food consumers are older (Latacz and Foster, 1997), while another study concluded that consumers around the age of 30 years had the highest interest in organic foods in the UK (Padel and Foster, 2005). Another research showed that organic products are mostly preferred by consumers who are younger than 45 years old in Europe (Wier and Calverley, 2002). The age of this

**Table 5.** The Kruskal-Wallis and Man Whitney U test results of the consumers' preferences for specific characteristics of organic food (GS1 to GS6) according to social-demographic variables.

Variables	Tests	GS1	GS2	GS3	GS4	GS5	GS6
Gender	Mann-Whitney U	14585.0	15202.5	13384.5	15104.5	13885.5	13755.5
	Wilcoxon W	49830.0	50447.5	48629.5	50349.5	49130.5	49000.5
	Z Value	-0.974	-0.384	-2.368	-0.476	-2.251	-2.014
	Asymp Sig	0.330	0.701	0.018 <sup>a</sup>	0.634	0.024 <sup>a</sup>	0.044 <sup>a</sup>
Age	Chi-Square	1.915	4.170	4.937	7.841	9.985	4.513
	df	4	4	4	4	4	4
	Asymp Sig	0.751	0.383	0.294	0.096 <sup>b</sup>	0.049 <sup>a</sup>	0.341
Marital Status	Chi-Square	0.016	0.617	1.005	5.181	2.353	9.494
	df	2	2	2	2	2	2
	Asymp Sig	0.992	0.735	0.605	0.098 <sup>b</sup>	0.308	0.009 <sup>a</sup>
Number of Household	Chi-Square	5.823	6.013	4.738	5.631	3.578	12.632
	df	4	4	4	4	4	4
	Asymp Sig	0.213	0.198	0.315	0.228	0.466	0.013 <sup>a</sup>
Education Level	Chi-Square	2.743	7.666	9.038	22.077	9.663	9.943
	df	3	3	3	3	3	3
	Asymp Sig	0.433	0.097 <sup>b</sup>	0.029 <sup>a</sup>	0.000 <sup>a</sup>	0.022 <sup>a</sup>	0.019 <sup>a</sup>
Occupation	Chi-Square	8.090	1.445	3.037	10.738	9.668	5.262
	df	3	3	3	3	3	3
	Asymp Sig	0.044 <sup>a</sup>	0.695	0.386	0.013 <sup>a</sup>	0.022 <sup>a</sup>	0.094 <sup>b</sup>
Income	Chi-Square	1.482	6.413	2.122	3.528	9.353	8.821
	df	3	3	3	3	3	3
	Asymp Sig	0.686	0.093 <sup>b</sup>	0.548	0.317	0.025 <sup>a</sup>	0.032 <sup>a</sup>
Settlement	Chi-Square	6.803	1.499	1.910	5.876	0.360	2.130
	df	2	2	2	2	2	2
	Asymp Sig	0.033 <sup>a</sup>	0.473	0.385	0.053 <sup>b</sup>	0.835	0.345

<sup>a</sup> and <sup>b</sup> Indicate the degree of statistical significance of, respectively,  $P < 0.05$  and  $0.05 < P < 0.10$ .



interest group was found to be from 35-49 years in Finland and 25-40 years in Italy (Zanoli *et al.*, 2004). Another research concluded that age had a less explanatory effect on organic consumption (Fricke and Alvensleben, 1997).

The existence of high level of statistically significant differences at GS6, i.e. nutrition value in marital status, was variable among the sub-groups ( $P < 0.05$ ) and GS4, i.e., food safety and no additives, has marginally significant differences ( $0.05 < P < 0.10$ ). The differences are attributable to married and widowed participants. The married respondents had a more positive approach to organic foods compared to their widowed counterparts. A study showed that there was a relationship between marital status and gender towards safe food consumption and concluded that divorced people had low food security (Hanson *et al.*, 2007). The responsibilities increase together with marriage. In this regard, the results are consistent. Statistically significant differences exist between the nutrition value variable and household number arise from household numbers' the sub-groups ( $P < 0.05$ ). This difference occurs in a family with 3 children, that is, almost the same as the mean value of the survey. Şanlıurfa with 4.13% which was with the highest fertility rate in Turkey and 50.8% of the population of Şanlıurfa consisted of the age group of 19 and below in 2018 (Karacadağ Kalkınma Ajansı, 2019). The number of children in the household is an effective factor in organic food consumption (Davies *et al.*, 1995; Fricke and Alvensleben, 1997; Wier and Calverley, 2002; Zanoli *et al.*, 2004; Padel and Foster, 2005; Mutlu, 2007; Yi, 2009; Haghjou *et al.*, 2013; Sandallioglu, 2014).

There are statistically significant differences among sub-groups of education level variable for GS3, i.e. label-certificate of reliability ( $P < 0.05$ ). These differences exist among High School, University and Postgraduate sub-groups. The respondents with University and Postgraduate Degrees

have a more positive approach compared to respondents who are High School graduates. Also, there is a high level of statistically significant differences available for GS4, i.e. food safety and no additives ( $P < 0.05$ ), in education level. These differences are attributable to Primary School and High School leavers with University and Postgraduate sub-groups. The respondents with University and Postgraduate Degrees had a more positive approach to organic food compared to respondents who were Primary School and High School graduates. Statistically significant differences exist for GS5, i.e. hormone-free food and these differences can be attributed to High School, University, and Postgraduate students' sub-groups. The respondents with Postgraduate Degrees had a more positive approach compared to respondents who were University and High School graduates. Statistically significant differences existed for GS6, i.e. nutrition value ( $P < 0.05$ ) and these differences are attributable to High School, University and Postgraduate sub-groups. The respondents with University and Postgraduate Degrees had a more positive approach as compared to respondents who were High School graduates. GS2, i.e. odor-taste and flavor, had marginally significant differences ( $0.05 < P < 0.10$ ) and these differences are attributable to High School, University and Postgraduate sub-groups. The respondents with University and Postgraduate Degrees had a more positive approach compared to respondents who were High School graduates. Education level is an important factor in individuals' attitudes, perceptions, and decisions. When education level increases, there is an increase in the individuals' awareness, which results in being more selective about habits and living standards. The organic food consumers were mostly people with high education (Fricke and Alvensleben, 1997; Wier and Calverley, 2002; Zanoli *et al.*, 2004; Radman, 2005; Padel and Foster, 2005; Mutlu, 2007; Yi, 2009; Akin *et al.*, 2010; Karabas and Gürler, 2012; Crul *et al.*, 2013; Sandallioglu, 2014; Gürses, 2014;

Amirnejad and Tonakbar, 2015; Muhammad *et al.*, 2016). In these regards, the results are consistent.

There are statistically significant differences within the sub-groups of occupation variable for GS1, i.e. color-appearance and packaging ( $P < 0.05$ ). These differences are attributable to the inactive/unemployed, public servant, and private sector employees' sub-groups. The inactive/unemployed respondents, who were mostly homemakers, university students, and private sector employee, had a more positive approach to organic food compared to respondents who were public servants. Statistically significant differences exist for GS4, i.e. food safety and no additives ( $P < 0.05$ ), and these differences are attributable to the inactive/unemployed, public servants, and private sector employees' sub-groups. The public servant respondents had a more positive approach compared to the inactive/unemployed and private sector employees' respondents. Statistically significant differences exist for GS5, i.e. hormone-free, and these differences can be attributed to the inactive/unemployed, public servants, and self-employment sub-groups. The inactive/unemployed and public servant respondents had a more positive approach compared to self-employed respondents. GS6, i.e. nutrition value, had a marginally significant difference ( $0.05 < P < 0.10$ ) and this difference is attributable to private sector employees who had a more positive approach compared to public servants. A study has also concluded that occupation is an effective indicator of organic food consumptions (Muhammad *et al.*, 2016).

There are statistically significant differences within the sub-groups of income variable for GS5, i.e. hormone-free, and GS6, i.e. nutrition value, at the level of  $P < 0.05$  for both of them. These differences arise from who had an income level between 1,001 and 2,500 TL and who had an income level of 4,001 TL for both cases. The respondents of Gr. 2 had a more positive approach compared to those of Gr.4 for both cases. These results were unexpected. There

was a linear relationship between income and consumption preferences. The higher the income of individuals, the more they prefer to consume healthy and high-calorie foods. This situation can be explained using the Gr. 2, i.e. the middle and lower-income group, who mostly cook at home and are more selective on these issues. The GS2, i.e. odor-taste and flavor, had marginally significant differences ( $0.05 < P < 0.10$ ) and these differences can be attributed to Gr. 3 respondents who had an income level between 2,501 to 4,000 TL. Income is an important indicator with regard to purchasing power and preferences of individuals that reflect welfare. Many researchers have stated that income has an effect on organic agricultural products (Davies *et al.*, 1995; Latacz and Foster, 1997; Wier and Calverley, 2002; Zanolli *et al.*, 2004; Radman, 2005; Padel and Foster, 2005; Mutlu, 2007; Yi, 2009; Torjusen *et al.*, 2010; Akin *et al.*, 2010; Crul *et al.*, 2013; Haghjou *et al.*, 2013; Gürses, 2014; Amirnejad and Tonakbar, 2015; Muhammad *et al.*, 2016). On the other hand, another study has shown that food choices of Australian respondents in the welfare sample was the least consistent and socioeconomic differences in preference was explained to be 10% of healthy food purchasing behavior (Turrell, 1998).

There are statistically significant differences within the sub-groups of settlement variable for GS1, i.e. color-appearance and packaging ( $P < 0.05$ ), and these differences are more pronounced among residents of Karaköprü and Haliliye sub-districts. The respondents who were located at Karaköprü had a more positive approach compared to the Haliliye respondents. The GS4, i.e. food safety and no additives, had marginally significant differences ( $0.05 < P < 0.10$ ) attributable to Haliliye consumers. Another study has also shown that the location area affects organic food consumptions (Torjusen *et al.*, 2010). The settlement is a common living area that is effective on both the social status and attitudes of individuals.



## CONCLUSIONS

The surveyed area has more potential for organic foods than the amount of consumption and varieties reflected in this study. There is an increase in demand for food safety concerns, mostly for females, and taste, for males. Consumption culture is mainly based on knowledge, habits, and attitudes. There is a need for adequate knowledge of organic food and organic product bazaar or sales shops at the surveyed area where availability, variety, trust, labeling, and high price problems exist, as identified during the survey. The presence of such sales areas will contribute to the spread of organic farming and varieties. These problems can be overcome if the state organizes organic product sale areas and effective controls are made. The presence of such a sales area enables the producer and the consumer to meet directly. It was observed in this research that the consumers preferred to buy directly from the producers' stands. This situation will affect prices positively due to lack of the intermediaries. These sales areas should be made primarily in places where high-income groups reside, then, it should be expanded to the whole city. This will encourage a variety of consumption that will have multiple benefits for consumers, agricultural producers, and the policymakers. The widespread consumption will provide direct and indirect benefits in both the short and long terms. A study concluded in the Czech Republic (Naglova and Vlasicova, 2016) found that organic farms had been the most profitable and got the best results on the economic efficiency indicator among the other types of farming. Such benefits include health, that is to protect from foodborne diseases; diversification, that is needed for sustainable agricultural production; marketing, that requires segmentation for organic foods; rural development and employment, which means better income and living standards for the farmers; environmental concerns, meaning protection and conservation of

ecology; and a tool for dealing with climate change problems.

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## عوامل موثر بر مصرف کنندگان غذا های ارگانیک: مطالعه موردی در پروژه GAP منطقه Şanlıurfa ترکیه

م.ح. آیدوغدو، و ف. کایا

### چکیده

هدف این پژوهش ارزیابی دلایل و عوامل موثر بر مصرف کنندگان مواد غذایی ارگانیک در پروژه GAP در منطقه Şanlıurfa ترکیه بود. اندازه نمونه برای مطالعه با استفاده از فاصله اطمینان ۹۵٪ تعیین شد و ۳۸۲ مصاحبه با پرسشنامه انجام شد. شرکت کنندگان از میان مصرف کنندگان مواد غذایی ارگانیک و با استفاده از روش ساده نمونه برداری تصادفی انتخاب شدند. همچنین، برای تجزیه و تحلیل، مقیاس نگرش لیکرت (Likert) و آزمون های Mann-Whitney U و Kruskal-Wallis را به کار بردیم. چنین مشاهده شد که دانش و تبلیغات موجود در باره مواد غذایی ارگانیک کافی نیست، و منبع اصلی اطلاعات در این مورد اینترنت بود. نیز، نتایج نشان داد که مصرف کنندگان ترجیح می دهند که مواد غذایی ارگانیک را مستقیماً از تولید کنندگان بخرند و در این مورد نیاز به راه اندازی بازار غذای ارگانیک است. بسامد مصرف (consumption frequency) میوه های تازه و سبزیجات ۷۴/۱٪ بود و بعد از آن شیر و مواد لبنی با بسامد ۵۶٪. مطابق نظر ۹۳/۷٪ پاسخ دهندگان، مهمترین دلیل برای مصرف این مواد، بدون-هورمون بودن آنها است و بعد از آن از نظر بو-طعم و مزه (۹۲/۷٪). از نظر اهمیت، جنبه های رنگ-ظاهر- و بسته بندی در ردیف آخر قرار داشت. سطح آموزش، و به دنبال آن درآمد، جنسیت، وضعیت تاهل، سن، موقعیت سکونت، و تعداد اعضای خانواده دلایلی هستند که به طور معناداری رفتار مصرفی را توجیه می کنند. این پژوهش در نوع خود جزو اولین پژوهش ها در پروژه GAP در منطقه Şanlıurfa می باشد. نتایج پژوهش برای تولید کنندگان کشاورزی و سیاستگذاران تولیدات کشاورزی، بازار یابی و توسعه روستایی از اهمیت برخوردار است.