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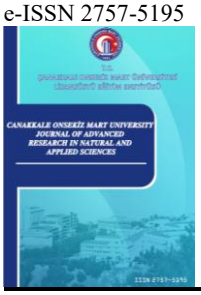

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Evaluation of Consumers' Aspects on Organic Farming Products by Regions

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Abstract − The main purposes of this study were to analyze the attitude and behavior of the consumers regarding to purchase of the organic food, the socio-economic comparison of the consumers consuming and non-consuming organic food and to determine the organic food consumption in consideration of different regions. This research was carried out by a questionnaire study with 1494 consumers, consuming organic and non-organic products in six regions in accordance with their socio-economic development index values. By making use of average, percentage and cross tables during the analysis of the data obtained, some of the socio-economical characteristics of the consumers were determined. Factor analysis was used to evaluate the attitudes of the producers consuming organic products regarding the organic products. 25.60% of the consumers in the first region, 47.59% of the consumers in second region, 31.33% of the consumers in third region, 20.48% of the consumers in fourth region, 27.11% of the consumers in the fifth region, 13.86% of the consumers in sixth region declared that they were consuming organic food. Associated with showing and alteration according to the regions, the most consumed organic products were, in respectively, egg, fruit, milk, vegetable. While the 91.30% of the consumers that did not consume organic products in the first region, so did the 94.74% of the third region, 92.42% of the fourth region, 94.21% of the fifth region, 95.80% of the sixth region expressed a positive opinion about consuming organic products, this ratio was determined as 78.16% in the second region.

Keywords *– Consumer behaviours, consumption, organic farming, organic product, Turkey*

1. Introduction

Increasing environmental pollution and problems in human health have created many problems for producers and consumers. Over time, producers and consumers have started to produce organic agricultural products, which is a production method that does not harm people and the natural environment. The products

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produced with the organic farming method have become products that are preferred by conscious and high-income consumers in the world and have a wide market potential (Aktürk, 2012).While organic agriculture had an agricultural production philosophy in which ecology was completely addressed at the beginning, it has transformed into a marketing structure that has been reduced to the level of "brand" in order to take part in the globalizing world trade and has been registered with the name "organic".

Since 1980, organic agriculture has gained a commercial dimension by being removed from family business with the increasing demand of consumers and has started to be applied in the USA and EU countries (Turhan, 2005). Organic agricultural production is carried out without harming people and the environment. It aims to improve the natural balance in the natural environment, which has been damaged by the wrong application of chemical substances and these chemical substances. In other words, it is expressed as an agricultural method that is guaranteed by a certain control and certification process and is carried out without the use of synthetic chemical inputs and pesticides (Eti, 2014).

An organic product is all kinds of products produced, processed, packaged, labelled and put on the market as certified by the entrepreneur with the organic farming method. Organic products are defined as foodstuffs containing plant and animal foods in which genetic engineering, artificial and similar fertilizers, protectors, colorants, additives, chemicals, brightening agents and chemical packaging materials are not used in their cultivation and processing (Akın, Çiçek, İnal & Toksarı, 2010).

The consumption of organic products is increasing in Turkey as well as in the world, depending on the awareness of the consumers and the increase in the income level. Due to the increasing consumer awareness in recent years, consumers are faced with the risk of encountering health problems and safety of foodstuffs and as their concerns increase, they tend to organic products instead of products grown with pesticides, hormones and various chemicals (Özer, 2008). Organic agriculture activities in Turkey started not due to the increase in domestic demand, but to the demands of consumers in developed countries, and the main purpose was to increase exports of Turkey's basic agricultural products and enter new markets (Ataseven & Güneş, 2008).

Consumers in Turkey as well as all over the world; show more and more sensitivity about the environment, health and safe nutrition. This sensitivity increases the interest and demand of consumers for organic foods, and enables the domestic market in organic food products. In Turkey, it is necessary to increase the knowledge level of consumers about organic foods and their benefits, and in the marketing process of organic foods, the consumer trends and the demographic information of the consumers should be investigated, and this is also important for the growth of the domestic market. It is not possible to keep organic food products in stocks, and the production amounts of organic food products are determined in line with the demands in the domestic and foreign markets (Sarıkaya, 2007). In this direction, it is important for both implementers and researchers to learn organic food purchasing motivations in order to increase the purchasing potential of consumers. Considering the importance of organic food consumption in terms of human health, this state will have positive effects on consumers (Cengiz & Şenel, 2017).

While 150 kinds of organic products were produced by 12,428 producers on 89,827 hectares of land in 2002, 278 kinds of organic products were produced by 52,600 producers in 346,767.40 hectares of land in 2020. In terms of organic animal production, the number of farmers, which was 10 in 2004, increased to 114 in 2020; and the number of animals increased from 26,500 to 1,130,165. The number of farmers engaged in organic beekeeping, which was 256 in 2004, increased to 494 in 2020 and the number of hives, which was 38,792, increased to 89,128 (Anonymous, 2022).

In order for the enterprises to continue their existence in the organic food market, it is necessary to determine the purchasing behaviors of consumers, to develop products and marketing strategies suitable for the needs of the target market. Encountering the needs of consumers and consumer satisfaction is extremely important in the development of marketing strategies. In this study attitudes and behaviors of the consumers about purchasing organic food in Turkey were determined. The research was conducted in six regions determined according to the socio-economic development index and the regions were compared. When the studies on the subject are examined, it is striking that the studies are generally carried out on a provincial basis. This study is a first in terms of being carried out throughout Turkey and making regional comparisons.

2. Materials and Methods

The research was conducted in 2018 in six regions in Turkey classified in terms of development levels according to socio-economic development index values, and 32 provinces were selected by taking into account the index values. The target group of the study consisted of consumers selected by sampling. The primary data of the research consisted of data collected from these consumers by face-to-face interview technique. Survey forms prepared in accordance with the purpose of the research were filled by the researchers through face-to-face surveys. Thus, the primary data were obtained directly from the consumers. Secondary data, on the other hand, were obtained by using the relevant literature and statistics.

Provinces in Turkey are classified in six levels in terms of their development levels according to their socio-economic development index values. The index values of the provinces in the first level are greater than 1, the index values of the provinces in the 2nd, 3rd, 4th and 5th levels are between 1 and -1, and the index values of the provinces in the 6th level are less than -1. There are 8 provinces in the first level, 13 provinces in the second level, 12 provinces in the third level, 17 provinces in the fourth level, 16 provinces in the fifth level and 15 provinces in the sixth level. Approximately 25% of the number of provinces at each level was selected purposefully, taking into account the index values, and the population numbers of the provinces were obtained. The population of the selected provinces corresponds to 68% of the total population of Turkey (79,814,871). The total population of the provinces of İstanbul, Ankara and İzmir, which are in the first level, corresponds 30.53% of the total population of Turkey. Considering the total population of the provinces at each level, the number of consumers to be surveyed was determined by the proportional sampling formula (2.1.) given below (Newbold, 1995). The number of surveys was distributed proportionally to the provinces. Sampling was done separately for the provinces of İstanbul, Ankara and İzmir. Since the characteristics of the consumers constituting the main population were not known at the beginning, p=0.5 was taken to maximize the sample size.

$$n = \frac{N.p(1-p)}{(N-1)\sigma^2 p + p(1-p)} \quad (2.1)$$

In the formula;
n = sample size
N = Population size (total population size)
p = Estimation ratio (consumption rate of organic products) (based on 50% assumption)
σ^2_p = Variance of the ratio (calculated according to a certain confidence interval and margin of error)
According to 99% confidence interval and 0.10 margin of error;
$Z_{\alpha/2\sigma p} = r$
$2.58\ _{\sigma p} = 0.10$
$_{\sigma p} = 0.03876.$

As a result of the sampling, the number of consumers surveyed was determined as 1494. The provinces where the survey was conducted and the number of consumers are given in Table 1.

Table 1
The provinces where the survey was conducted and the number of surveys

Region	Provinces	Number of surveys	Region	Provinces	Number of surveys
1	İstanbul	166	4	Kırıkkale	12
1	Ankara	166	4	Malatya	35
1	İzmir	166	4	Hatay	69
1	Kocaeli	38	4	Kastamonu	17
1	Antalya	49	4	Bartın	9
1	Bursa	61	4	Çorum	24
1	Eskişehir	18	5	Çankırı	9
2	Bolu	8	5	Erzurum	39
2	Adana	61	5	Kahramanmaraş	57
2	Kayseri	37	5	Ordu	39
2	Konya	60	5	Yozgat	22
3	Burdur	10	6	Diyarbakır	59
3	Karabük	9	6	Iğdır	7
3	Zonguldak	23	6	Batman	21
3	Gaziantep	75	6	Bingöl	10
3	Samsun	49	6	Şanlıurfa	69

In the analysis of the obtained data, by using descriptive statistics such as mean, percentage and cross tables; some socio-economic characteristics of the surveyed consumers were determined. The chi-square test was used in discrete data whether there was a difference between the groups that consumed organic products and those that did not. In continuous data, firstly, the variables with and without normal distribution were determined by using Kolmogorov-Smirnov test. As the number of groups was 2, t-test was used for normally distributed variables, and the Mann-Whitney U test for non-normally distributed variables.

Factor analysis was used to evaluate the judgments of producers consuming organic products about organic products. Factor analysis is a multivariate analysis technique used by the researcher to understand the relationships between the concepts in the data set more easily by revealing the main factors belonging to a data set consisting of many variables that are related to each other. In other words, it is a technique that makes many variables related to each other less meaningful and completely independent from each other (Kleinbaum, Lawrence & Keith, 1998).

Factor analysis is carried out in four basic stages. First, the evaluation of the suitability of the data for factor analysis, obtaining the factors, rotation of the factors and naming the factors. Three methods are used to evaluate whether the data set is appropriate. These are the creation of the correlation matrix, Kaiser-Meyer-Olkin (KMO) and Bartlett tests (Akgül & Çevik, 2003). In the calculation of the correlation matrix, a high correlation relationship between the variables is searched. Variables with very strong correlations will generally be in the same factor.

Another indicator of the relationship between variables is the partial correlation coefficient. The Kaiser-Meyer-Olkin (KMO) test is an index that compares the size of the observed correlation coefficients. KMO value is considered as excellent if it is above 0.90, very good between 0.80-0.90, good between 0.70-0.80, moderate between 0.60-0.70, weak between 0.50-0.60 and unacceptable below 0.50 is considered (Sharma, 1996).

The Bartlett Test of Sphericity is used to test whether the correlation matrix is a unit matrix with all diagonal terms 1 and non-diagonal terms 0. This test requires that the data originate from multiple normal distributions (Hair, Anderson, Tahtam & Black, 1998). In determining the number of factors, the eigenvalue and scree test chart are mostly used. In determining according to eigenvalues, factors with eigenvalues greater than 1 are derived. In the scatter diagram (Screet test) method, the graph of the eigenvalues is examined and the factors up to the point where the vertical line becomes horizontal are included in the solution (Lewis, 1994). Vertical rotation techniques such as Varimax, Quartimax, Orthomax, Biquartimax, Equamax, and oblique rotation techniques such as Oblimax, Quartimin, Oblimin are used for better interpretation of the factors. In the most widely used Varimax method, some factor loadings in each column are approached to 1, while many of the remaining values are approached to 0. In this method proposed by Kaiser, rotation is performed to ensure that the factor variances are maximized (Çokluk, Şekercioğlu & Büyüköztürk, 2010).

Factors related to considerations on organic food products were subjected to cluster analysis based on the factor scores obtained. Cluster analysis has taken its place among the multivariate statistical methods that are frequently used in classifying grouped data according to their similarities. Cluster analysis focuses on the clusters or groups that will emerge by calculating the values of individuals or objects observed in the research on all measured variables. In order to determine the similarities between individuals or objects, distance measures, correlation measures or similarity measures of qualification data are used (Kalaycı, 2009).

3. Results and Discussion

Organic product consumption status by regions is given in Table 2. 25.60% of the consumers in the first region, 47.59% of the consumers in the second region, 31.33% of the consumers in the third region, 20.48% of the consumers in the fourth region, 27.11% of the consumers in the fifth region, 13.86% of the consumers in the sixth region stated that they consume organic products. It was determined that the region where organic products were consumed the most was the second region. The fact that the production of vegetables and fruits is quite common in most of the provinces in the second region, the majority of the provinces are located in the Marmara and Aegean regions, and the awareness level of the consumers in these regions is higher, can be shown among the reasons for the higher consumption of organic products in this region.

As a result of the chi-square test performed to determine whether or not the difference in organic product consumption status was statistically significant between the regions, it was determined that there was a difference at 1% (p=0.000) significance level.

Table 2
Consumption of organic products by regions

Organic product consumption	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	170	25.60	79	47.59	52	31.33	34	20.48	45	27.11	23	13.86	403	26.97
No	494	74.40	87	52.41	114	68.67	132	79.52	121	72.89	143	86.14	1,091	73.03
Total	664	100.00	166	100.00	166	100.00	166	100.00	166	100.00	166	100.00	1,494	100.00
Chi-square: 56.104			p: 0.000											

While the average age of consumers consuming organic products was 34.67, the average age of consumers who did not consume organic products was 37.79. The monthly average food expenditure of consumers consuming organic products was determined as 1,323.33 TL whereas the monthly average food expenditure of consumers who did not consume organic products was determined as 1,149.87 TL. The education period of the consumers consuming and not consuming organic products were found as 12.89 and 11.60 years. As a result of the Mann-Whitney U test carried out to determine whether or not the difference in age, monthly food expenditure and education period of consumers was statistically significant between the groups, it was determined that there was a difference at 1% (p=0.000) significance level (Table 3).

Table 3
Some socio-cultural indicators of consumers

Socio-cultural indicators	Age		Monthly food expenditure		Education period	
	Average	P	Average	P	Average	P
Consuming organic products	34.67	0.002	1,323.33	0.000	12.89	0.000
Non-consuming organic products	37.79		1,149.87		11.60	

3.1. Consumers' Level of Knowledge about Organic Products

The opinions of consumers about organic products are given in Table 4. 68.61% of the consumers in both groups stated that organic products were products or foods that were not produced by using chemicals, 60.78% were products or foods from natural production, 60.51% were products or foods that were not produced by using hormones. 27.51% of the consumers stated that organic products were products or foods coming from

production that did not harm nature and the environment. In addition, 11.38% of the consumers stated that organic products were certified products or foods, while very few of the consumers declared that organic products were traceable and highly efficient products or foods. Organic foods are considered reliable because they do not use artificial chemical inputs in their production, the use of genetically modified organisms is prohibited, they are produced with methods that do not harm the environment, and they are controlled and certified at every stage of production. As a result of the study, it was seen that the most important judgment of the consumer about organic foods was being healthy.

In the study conducted by Doğan & Gürel (2016), it was determined that 64.86% of the consumers described organic products as products for which the use of drugs, hormones and chemicals was prohibited or limited.

Table 4
Consumers' considerations on organic products

What is an organic product?	Consuming organic products		Non-consuming organic products		Total*	
	Number	%	Number	%	Number	%
Chemical-free products/food	294	72.95	731	67.00	1025	68.61
Products/foods from natural production	275	68.24	633	58.02	908	60.78
Hormone-free products/foods	278	68.98	626	57.38	904	60.51
Products/foods from production that does not harm nature and the environment	157	38.96	254	23.28	411	27.51
Certified products/foods	81	20.10	89	8.16	170	11.38
Traceable products/food	43	10.67	42	3.85	85	5.69
High yield products/ foods	18	4.47	32	2.93	50	3.35

*Multiple options marked

Consumers were asked about their considerations on products produced with traditional methods (Table 5). The ratio of consumers who stated that there were drugs, hormones and antibiotics in products produced by traditional methods was almost the same in both groups, and it was determined as 76%. Chi-square test results showed that consumers' considerations on products produced by traditional methods did not change according to consumer groups.

Table 5
Consumers' considerations on products produced with traditional methods

Are there drugs, hormones, antibiotics in products produced by traditional methods?	Consuming organic products		Non-consuming organic products		Total	
	Number	%	Number	%	Number	%
Yes	309	76.67	832	76.26	1141	76.37
No	65	16.13	149	13.66	214	14.32
No idea	29	7.20	110	10.08	139	9.30
Total	403	100.00	1,091	100.00	1,494	100.00
Chi-square: 3.897 p: 0.142						

Consumers were asked whether organic products had a certified and controlled production process (Table 6). While 63.28% of consumers consuming organic products stated that organic products had a certified and controlled production process, this ratio was determined as 41.70% in the consumer group who did not consume organic products. It was observed that consumers who consumed organic products had a higher level of knowledge about organic agricultural products. As a result of the chi-square test carried out to determine whether the difference in the opinions of consumers about the certified and controlled production process of organic products was statistically significant between the groups, it was determined that there was a difference at 1% (p=0.000) significance level.

Table 6
Consumers' considerations on the certified and controlled production process of organic products

Do organic products have a certified and controlled production process?	Consuming organic products		Non-consuming organic products		Total	
	Number	%	Number	%	Number	%
Yes	255	63.28	455	41.70	710	47.52
No	64	15.88	423	38.77	487	32.60
No idea	84	20.84	213	19.52	297	19.88
Total	403	100.00	1,091	100.00	1,494	100.00
Chi-square: 76.379 p: 0.000						

Consumers were asked about their considerations on the effect of certified organic products on consumption (Table 7). 63.52% of the consumers consuming organic products and 59.12% of the non-consumers stated that certified organic products had an impact on consumption. While 10.67% of consumers consuming organic products stated that they were undecided on this issue, this ratio was determined as 24.01% in the consumer group that did not consume organic products. As a result of the chi-square test conducted to determine whether the difference in the opinions of consumers regarding the effect of certified organic products on consumption was statistically significant between the groups, it was determined that there was a difference at 1% (p=0.000) significance level.

Table 7
Consumers' considerations on the effect of certified organic products on consumption

The effect of certified organic products on consumption	Consuming organic products		Non-consuming organic products		Total	
	Number	%	Number	%	Number	%
Not effective	5	1.24	22	2.02	27	1.81
Not very effective	26	6.45	89	8.16	115	7.70
I'm undecided	43	10.67	262	24.01	305	20.41
Effective	256	63.52	645	59.12	901	60.31
Very effective	73	18.11	73	6.69	146	9.77
Total	403	100.00	1,091	100.00	1,494	100.00
Chi-square: 68.006 p: 0.000						
	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation
	3.91	0.807	3.60	0.811	3.69	0.821

1: not effective, 2: not very effective, 3: Undecided, 4: effective, 5: very effective

Information sources of the consumers about organic products were investigated within the scope of the research (Table 8). 51.67% of the consumers in both groups stated that they obtained information about organic products from the internet and social media, 46.92% from television, and 46.12% from the friends. In addition, 11.85% of consumers stated that they obtained information from printed publications, 11.18% from doctors, 9.77% from the Ministry of Agriculture and Forestry, and 9.44% from fairs. It was observed that the sources of information that consumers obtained the most information about organic products were the internet, social media and television. Published publications and institutions, which were thought to be among other sources of information, had little impact. It is thought that the studies on creating the education process and awareness from the producer to the consumer will be effective on organic product consumption. The trainings provided by the Ministry of Agriculture and Forestry, the Ministry of Health, the Ministry of National Education for producers, consumers and students should be increased.

In the study conducted by Gülgör (2017), it was determined that the primary sources of information about organic products of the consumers were friend advice and the internet whereas the most important information sources of the consumers about organic products were visual media and the internet in Doğan & Gürel (2016) literature.

Table 8
Information resources of consumers about organic products

Information sources of consumers about organic product	Consuming organic products		Non-consuming organic products		Total*	
	Number	%	Number	%	Number	%
Internet, social media	257	63.77	515	47.20	772	51.67
TV	191	47.39	510	46.75	701	46.92
Friends	187	46.40	502	46.01	689	46.12
Magazine-newspaper (printed publications)	59	14.64	118	10.82	177	11.85
Doctors	82	20.35	85	7.79	167	11.18
Ministry of Agriculture and Forestry	35	8.68	111	10.17	146	9.77
Fairs	49	12.16	92	8.43	141	9.44

*Multiple options marked

The required criteria to be applied for more consumption of organic products were asked to the consumers and their answers are given in Table 9. Consumers were asked to rank the answers according to their status of finding it important, and the answers were scored from the most important to the least important. Organic product consumers stated that access to organic food should be easy in order to consume more organic products, while consumers who did not consume organic products stated that organic products should primarily be reliable. Consumers in both consumer groups stated that more promotion of organic products would have less impact on organic product consumption. It is possible to say that the easy access to organic products and the high prices of organic products were highly effective on consumption. The fact that organic product prices are at a more reasonable level will be very effective in the tendency of all individuals to consume organic products.

In the study carried out by Shepherd, Magnusson & Sjödén (2005), it was determined that health benefits were demonstrated to be more strongly related to attitudes and behavior toward organic foods than were perceived environmental benefits. Unal, Görgün Deveci & Yıldız (2019) determined in their study that consumptions motives of healthiness, easiness, mood, and convenience-price of organic foods motivated consumers to buy organic foods. Eyinade, Mushunje & Gbolahan Yusuf (2021) determined that the health and safety of organic products was important for consumers' consumption of organic products. In the study carried out by Cavite, Mankeb, Kerdsriserm, Joedsak, Direksri & Suwanmaneepong (2022), it was revealed that subjective norms, perceived behavioral control, health, consciousness, and knowledge of product traceability significantly affected consumers' intention to purchase traceable organic rice. In the study carried out by Ben Khadda, Ezrari, Radouane, Boutagayout, El Housni, Lahmamsi, Zahri, Houssaini, El Ghadraoui, Elamine & Guiné, Raquel (2022), it was revealed that the price was very important for the majority of consumers in terms of organic product consumption.

Table 9
Criteria to be applied for more consumption of organic products

What should be/should be done to consume more organic products?	Consuming organic products		Non-consuming organic products	
	Total score	Order	Total score	Order
Organic food should be easy to access	1,486	1	3,214	4
Must be reliable	1,470	2	4,447	1
Prices should be lower	1,288	3	3,670	2
Income should be more	1,119	4	3,370	3
More promotion should be done	721	5	1,675	5

Consumers were asked about their considerations on purchasing organic products for children (Table 10). 98.51% of consumers consuming organic products and 91.02% of non-consumers stated that organic products should be purchased for children. As a result of the chi-square test, which was conducted to determine whether the difference in consumers' considerations about purchasing organic products for children was statistically significant between groups, it was determined that there was a difference at 1% (p=0.000) significance level.

Table 10
Consumers' considerations on buying organic products for children

Should organic products be purchased for children?	Consuming organic products		Non-consuming organic products		Total	
	Number	%	Number	%	Number	%
Yes	397	98.51	993	91.02	1390	93.04
No	6	1.49	98	8.98	104	6.96
Total	403	100.00	1,091	100.00	1,494	100.00
Chi-square: 25.517 p: 0.000						

Consumers were also asked about their considerations on whether organic product preference was important in baby care and growth or not (Table 11). 36.97% of the consumers consuming organic products and 31.81% of non-consumers stated that they fully agreed with the importance of choosing organic products in baby care and growth. While 2.98% of the consumers consuming organic products stated that they were undecided on this issue, this ratio was determined as 8.07% in the non-consumer group. As a result of the chi-square test, it was determined that there was a difference at 1% (p=0.000) significance level on the considerations of the consumers about whether or not organic product preference was important in baby care and growth.

Table 11
Consumers' thoughts on organic product preference in baby care and growth

Is organic product preference important in baby care and growth?	Consuming organic products		Non-consuming organic products		Total	
	Number	%	Number	%	Number	%
I never agree	2	0.50	2	0.18	4	0.27
I do not agree	5	1.24	39	3,57	44	2.95
No idea	12	2.98	88	8.07	10	0.67
I agree	235	58.31	615	56.37	850	56.89
I totally agree	149	36.97	347	31.81	496	33.20
Total	403	100.00	1,091	100.00	1,494	100.00
Chi-square: 22.515 p: 0.000						
	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation
	4.30	0.636	4.16	0.730	4.20	0.708

3.2. Findings Concerning Consumers Consuming Organic Products

The time for consumers to start consuming organic products was determined within the scope of the study (Table 12). It was determined that consumers in all regions mostly started to consume organic products for more than 5 years. This result was similar to the findings of Gülgör (2017).

It was observed that the consumer group, whose time to start consuming organic products was between 3-5 years, had the highest rate in the sixth region and the lowest rate in the fourth region. The consumer group, whose time to start consuming organic products was between 1-3 years, resided in the third region with the highest ratio. The ratios of the consumers who stated that they started to consume organic products in the last year and in the last six months were quite low in all regions, and 13.04% of the consumers residing only in the sixth region stated that they started consuming organic products a year ago. When Table 12 was examined, it was possible to say that consumers were mostly experienced in organic product consumption.

Table 12
Start time of consuming organic products

Organic product consumption time	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
More than 5 years	106	62.35	49	62.03	28	53.85	27	79.41	30	66.67	10	43.48	250	62.03
3-5 years	37	21.76	17	21.52	14	26.92	2	5.88	7	15.56	8	34.78	85	21.09
1-3 years	21	12.35	8	10.13	9	17.31	1	2.94	6	13.33	2	8.70	47	11.66
Last year	5	2.94	2	2.53	0	0.00	1	5.88	1	2.22	3	13.04	13	3.23
In the last 6 months	1	0.59	3	3.80	1	1.92	2	5.88	1	2.22	0	0.00	8	1.99
Total	170	100.00	79	100.00	52	100.00	34	100.00	45	100.00	23	100.00	403	100.00

Organic agricultural products consumed by regions are given in Table 13. Although it varied according to the regions, it was determined that the most consumed organic products were eggs, fruits, milk and vegetables, respectively. These were followed by chicken meat, honey, red meat, dairy products, legumes and meat products, respectively.

The three most consumed organic products in the first region were eggs, milk, fruit, respectively; vegetables, fruits, eggs in the second region; fruit, vegetables, eggs in the third region; milk, eggs, vegetables in the fourth region; fruit, egg, milk in the fifth region and milk, egg and fruit in the sixth region.

It was determined that organic egg consumption was highest in the first and sixth regions, fruit consumption was highest in the fifth region, milk consumption was the highest in the fourth and sixth regions, and vegetable consumption was the highest in the second and fourth regions.

It was determined that the consumption of organic chicken meat, honey, red meat, dairy products and meat products of consumers residing in the fourth region, and organic legumes consumption of consumers residing in the second region were higher than the consumers in other regions.

According to the average of the regions, consumption of legumes, meat products, organic jam, fruit and vegetable juices, canned food, flour/macaroni, tea/coffee, dried fruit/vegetables was determined to be below 5%.

When the Table was examined, it was seen that organic vegetable consumption was higher in the second region. It was considered that the higher production of vegetables and fruits in most of the provinces in this region can be a factor in this situation. In the study conducted by İlter &Yılmaz (2016), it was determined that the most consumed organic products by consumers were eggs, fruits, vegetables and milk, which was similar to the research result.

Table 13
Consumed organic agricultural products

Consumed organic products	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Egg	114	67.06	44	55.70	25	48.08	21	61.76	27	60.00	16	69.57	247	61.29
Fruit	99	58.24	49	62.03	29	55.77	20	58.82	33	73.33	12	52.17	242	60.05
Milk	109	64.12	36	45.57	24	46.15	24	70.59	25	55.56	17	73.91	235	58.31
Vegetable	83	48.82	50	63.29	26	50.00	21	61.76	22	48.89	11	47.83	213	52.85
Chicken meat	42	24.71	17	21.52	7	13.46	11	32.35	10	22.22	4	17.39	91	22.58
Honey	26	15.29	11	13.92	14	26.92	12	35.29	6	13.33	4	17.39	73	18.11
Meat	12	7.06	13	16.46	12	23.08	10	29.41	7	15.56	3	13.04	57	14.14
Dairy products	7	4.12	15	18.99	5	9.62	7	20.59	7	15.56	4	17.39	45	11.17
Legumes	10	5.88	13	16.46	2	3.85	3	8.82	3	6.67	3	13.04	34	8.44
Meat products	7	4.12	7	8.86	2	3.85	6	17.65	5	11.11	1	4.35	28	6.95
Jam	9	5.29	5	6.33	1	1.92	4	11.76	0	0.00	0	0.00	19	4.71
Fruit/vegetable juice	7	4.12	2	2.53	1	1.92	1	2.94	0	0.00	0	0.00	11	2.73
Canned foods	3	1.76	3	3.80	2	3.85	2	5.88	0	0.00	0	0.00	10	2.48
Flour/macaroni	5	2.94	1	1.27	1	1.92	2	5.88	0	0.00	0	0.00	9	2.23
Tea, coffee	4	2.35	2	2.53	1	1.92	2	5.88	0	0.00	0	0.00	9	2.23
Dried fruit/vegetable	3	1.76	3	3.80	1	1.92	2	5.88	0	0.00	0	0.00	9	2.23

*Multiple options marked

Consumers were asked about the criteria they paid attention to when purchasing organic products (Table 14). Consumers were asked to rank the answers according to their status of finding it important, and the answers were scored from the most important to the least important. While the consumers in the first region stated that they primarily paid attention to the appearance, taste and smell while purchasing organic products, the consumers in the other regions stated that they primarily paid attention to the expiration date when purchasing organic products. It was determined that the second important issue for the consumers in the first region was the expiration date, the second important issue for the consumers in the fifth region was the price, and the second important issue for the consumers in the other regions was the appearance, taste and smell of the product.

Table 14
Criteria to consider when purchasing organic products

Criteria	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6	
	Total score	Order	Total score	Order	Total score	Order	Total score	Order	Total score	Order	Total score	Order
Appearance-taste-smell	743	1	349	2	212	2	147	2	182	3	97	2
Expiration date	729	2	368	1	248	1	164	1	204	1	102	1
Price	590	3	225	5	165	4	110	3	183	2	90	3
Packaging	543	4	208	6	130	6	88	6	104	6	60	6
Certification institution	494	5	261	4	165	5	100	5	115	5	67	5
Label	478	6	269	3	175	3	107	4	161	4	69	4

Consumers were also asked whether they paid attention to the logo of the organic product they purchased (Table 15). While 77.65% of consumers in the first region, 67.31% of the consumers in the third region, 70.59% of the consumers in the fourth region, 66.67% of the consumers in the fifth region, 69.57% of the consumers in the sixth region stated that they paid attention to the logo of the organic product they purchased, this ratio was below 50% (46.84%) among the consumers in the second region. Considering the high consumption of organic products in the second region, it is possible to say that consumers living in this region were more conscious about organic product consumption.

Table 15
Consumers' attention to the logo of the organic products

Attention to the logo	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	132	77.65	37	46.84	35	67.31	24	70.59	30	66.67	16	69.57	274	67.99
No	28	16.47	31	39.24	15	28.85	7	20.59	11	24.44	7	30.43	99	24.57
No idea	10	5.88	11	13.92	2	3.85	3	8.82	4	8.89	0	0.00	30	7.44
Total	170	100.00	79	100.00	52	100.00	34	100.00	45	100.00	23	100.00	403	100.00

Consumers were also asked whether they made certification inquiries for organic products (Table 16). While 24.05% of consumers in the second region, 30.77% of the consumers in the third region, 35.29% of the consumers in the fourth region, 31.11% of the consumers in the fifth region, 30.43% of the consumers in the sixth region stated that they made certification inquiries for products, this ratio was very low for the consumers in the first region (12.94%).

Table 16
Status of consumers making certification inquiries of organic products

Making certification inquiry	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	22	12.94	19	24.05	16	30.77	12	35.29	14	31.11	7	30.43	90	22.33
No	139	81.76	56	70.89	34	65.38	21	61.76	26	57.78	16	69.57	292	72.46
No idea	9	5.29	4	5.06	2	3.85	1	2.94	5	11.11	0	0.00	21	5.21
Total	170	100.00	79	100.00	52	100.00	34	100.00	45	100.00	23	100.00	403	100.00

Consumers were asked to list their reasons for choosing organic products, and their answers are given in Table 17. Consumers were asked to rank the answers according to their status of finding it important, and the answers were scored from the most important to the least important. While consumers in the sixth region stated that they preferred organic products primarily as they were healthy, the primary reason for consumers in other regions was the absence of drugs and harmful substances in organic products. The last time consumers in all regions prefer organic products. It was determined that the last criterion of the consumers for preferring organic products was the environmental friendliness of organic products in all regions.

In the research conducted by Armağan & Özdoğan (2005), the fact that 75.8% of consumers stated their preference for being healthy and safe supported the findings of this study. In the study conducted by Karabaş & Gürler (2012), health and trust factors were found to be important by consumers. Ben Khadda, Ezrari, Radouane, Boutagayout, El Housni, Lahmamsi, Zahri, Houssaini, El Ghadraoui, Elamine & Guiné, Raquel (2022), determined in their study that the majority of consumers consumed organic products because they were healthy.

Table 17
Reasons for choosing organic products

Reasons for choosing organic products	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6	
	Total score	Order	Total score	Order	Total score	Order	Total score	Order	Total score	Order	Total score	Order
No drug-harmful substance	715	1	323	1	233	1	141	1	180	1	90	2
Healthy	670	2	317	2	201	2	129	2	173	2	100	1
Rich in nutrients	385	4	230	3	135	3	93	3	127	3	64	3
Taste-smell-image	444	3	211	4	131	4	93	4	127	4	57	4
Environmentally friendly	335	5	131	5	89	5	54	5	80	5	34	5

It was also determined how consumers distinguished organic products from non-organic products (Table 18). While 52.94% of the consumers in the first region and 55.88% of the consumers in the fourth region distinguished the organic products by the certificate and logo, 49.37% of the consumers in the second region, 65.38% of the consumers in the third region, 57.78% of the consumers in the fifth region and 47.83% of the consumers in the sixth region stated that they distinguished the organic products with their appearance.

When all regions were evaluated together, it was concluded that consumers distinguished organic products from non-organic products with their images, certificate-logo, label, taste and smell, respectively. Gülgör (2017), on the other hand, emphasized that the most important factors in distinguishing organic products from non-organic products were certificate-logo, taste, image and label information, respectively.

Table 18
Criteria for consumers to distinguish organic products from non-organic products

Criteria	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Total*	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Image	90	52.94	39	49.37	34	65.38	19	55.88	26	57.78	11	47.83	219	54.34
Certificate-logo	100	58.82	32	40.51	29	55.77	19	55.88	14	31.11	10	43.48	204	50.62
Label information	83	48.82	31	39.24	27	51.92	9	26.47	19	42.22	10	43.48	179	44.42
Taste	51	30.00	32	40.51	17	32.69	20	58.82	16	35.56	8	34.78	144	35.73
Smell	34	20.00	25	31.65	22	42.31	19	55.88	16	35.56	4	17.39	120	29.78

*Multiple options marked

3.3. Evaluation of the Considerations of Organic Food Consuming Consumers about Organic Food Product by Factor Analysis

Consumers consuming organic products were also asked about their considerations on the organic food product (Table 19).

Table 19
Considerations of the consumers about organic food product

Statements on organic food product	Significance					Avg.	Std. deviation
	1	2	3	4	5		
Organic food products are beneficial for my health.	5	5	7	243	143	4.28	0.68
Consuming organic food products protects me against diseases.	7	20	15	240	121	4.11	0.83
Organic food products are reliable because they are strictly inspected.	13	30	48	230	82	3.84	0.94
Organic food products are beneficial for the development of children.	3	5	17	242	136	4.25	0.66
Organic products are of higher quality because they are grown naturally.	2	14	19	265	103	4.12	0.69
Organic products are hormone-free.	2	32	14	251	104	4.05	0.81
Those who consume organic food products have stronger immune systems.	2	19	29	250	103	4.07	0.75
Consuming organic food products protects against cancer.	2	24	37	243	97	4.01	0.79
Organic food products do not contain GMOs.	6	29	32	247	89	3.95	0.85
Organic food products are tastier.	2	15	28	253	105	4.10	0.72
While growing organic products, nature is not harmed.	4	18	37	241	103	4.04	0.78
Organic food products do not contain chemicals.	6	28	17	258	94	4.01	0.83
Organic food products are easy to cook.	27	104	58	161	53	3.27	1.18
The products I buy from the village are organic.	62	118	32	147	44	2.98	1.31
Considering the cost of producing organic food, it is not expensive.	20	90	23	210	60	3.50	1.14
Organic food products must be certified.	4	15	19	256	109	4.12	0.74
Organic food products are expensive.	10	35	16	262	80	3.91	0.90
The price I pay for organic food products is not too much for my health.	8	62	33	227	73	3.73	0.99
Organic food products smell good.	2	17	39	259	86	4.02	0.72
Organic food products are beneficial to sick people.	4	13	42	268	76	3.99	0.72
If the fruit is wormy, it is organic.	30	105	61	165	42	3.21	1.16
All organic products on the market are organic.	86	212	39	49	17	2.25	1.06

1. Strongly disagree 2. Disagree 3. Undecided 4. Agree 5. Strongly agree

Consumers agreed with the statements that organic food products were beneficial to health, protected against diseases, were beneficial for the development of children, were of high quality as they were grown naturally, were hormone-free, immune systems of those who consumed organic food products were stronger, consuming organic food protected against cancer and organic food products were more delicious. In addition, it was seen that they agreed with the statements that nature was not harmed while growing organic products, organic products did not contain chemicals, organic products must be certified, organic food products smelled good and organic products were beneficial for sick people. It was determined that they tended to agree with the judgments that organic food products were reliable as they were strictly inspected, there are no GMOs in organic food products, organic products were expensive, but the price paid for organic food products was not high for health. It was determined that they were undecided about the judgments that the products obtained from the village were organic, organic food products were easily cooked, organic food was not expensive considering the production cost, and the fruit was organic if it was wormy. In addition, it was determined that consumers did not agree with the statement that all organic products in the market were organic (Table 19).

Factor analysis was performed using 22 variables. The 22 variables in Table 19 were reduced to 4 factors according to their degree of relationship. The communality was taken into account in testing the applicability of the factor analysis method. The communalities of the variables were found to be high and the average was 0.610. This indicated that the variables used were applicable for factor analysis.

First, the correlation matrix was created. Then, the KMO criterion expressed in Table 20, which compares the magnitudes of the correlation coefficients with the magnitudes of the partial correlation coefficients, was examined, and since the significance of the test was found to be significant according to this criterion, factor

analysis was considered appropriate. In other words, the KMO coefficient was found as 0.932, so the result was very good. For this reason, the sample size was sufficient for the study. According to Table 20, it was seen that the Bartlett test significance level value was 0.000. Since this value was less than 5% margin of error, the H0 hypothesis was rejected. In other words, the Bartlett test of Sphericity was found significant (chi-square = 4,741.934, p = 0.000).

Table 20
Suitability test for factor analysis (KMO and Bartlett test)

KMO and Bartlett test		
Kaiser-Meyer-Olkin fitness measure		0.932
Bartlett sphericity test	Approximate chi-square	4,741.934
	Degree of freedom (df)	231
	Significance	0.000

As seen in Table 21, 61.043% of the total variance was explained with 4 factors instead of 22 variables at the beginning. Whether the factors were significant or not was determined by examining the correlation matrix's eigenvalues greater than 1. The variance explanation percentages of these factors gave the total variance explained, the eigenvalues before and after the transformation and showed that there were 4 factors. The first factor explained 32.942% of the total variance, the second factor explained 10.989% of the total variance, the third factor explained 9.063% of the total variance, and the fourth factor explained 8.049% of the total variance. The cumulative amount of variance explained by the eigenvalues was 61.043% of the total variance.

Table 21
Total variance and variance explanation percentages of factors

Initial eigenvalues				Sum of translated squared weights		
Factors	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)
1	9.091	41.324	41.324	7.247	32.942	32.942
2	1.981	9.003	50.327	2.418	10.989	43.931
3	1.297	5.896	56.223	1.994	9.063	52.994
4	1.060	4.820	61.043	1.771	8.049	61.043
5	0.965	4.385	65.428			
6	0.845	3.842	69.270			
7	0.763	3.469	72.739			
8	0.711	3.230	75.970			
9	0.611	2.778	78.747			
10	0.552	2.510	81.257			
11	0.487	2.212	83.469			
12	0.474	2.156	85.625			
13	0.444	2.019	87.644			
14	0.420	1.908	89.552			
15	0.376	1.711	91.263			
16	0.368	1.672	92.936			
17	0.321	1.458	94.394			
18	0.307	1.397	95.791			
19	0.295	1.343	97.134			
20	0.234	1.066	98.199			
21	0.202	0.917	99.117			
22	0.194	0.883	100.000			

In order to interpret the factors, factor rotation was performed. Varimax method was preferred while performing factor rotation. As a result, the transformative factor loading matrix obtained from 22 variables and 4 factors is shown in Table 22.

When the criteria that constituted the F1 factor were examined, it was seen that these criteria were related to the benefits of organic food products to the health and environment. When the criteria constituting this factor were examined, it was seen that the criteria of "The immune systems of those who consume organic food products are stronger" was the variable with the highest factor loading with a factor load of 0.840, the average factor load of all criteria was 0.695, and the percentage of variance that can be explained was 32.942%. This factor was named as “Health and Environmental Benefits” because it included consumers' statements about the health and environmental benefits of organic products.

When the criteria that constituted the F2 factor were examined, it was seen that these criteria were related to the prices of organic products. While the criteria constituting this factor were examined, it was seen that "Organic food is not expensive considering the cost of production" had the loading of 0.816, "The price I pay for organic food products is not too much for my health" had factor loadings of 0.551, the average factor loading of these criteria was 0.684, and the variance percentage that can be explained was 10.989%. This factor was named as “Price” because it consisted of criteria that included the considerations of the consumers about the prices of organic products.

The average factor loadings of the criteria which were effective on F3 factor such as "All organic products in the market are organic", "The products I buy from the village are organic" and "Organic food products are easy to cook" was found as 0.640 and the explained variance percentage was 9.063%. This factor was defined as “Trust” because it consisted of criteria that included the trust of the consumers to the organic products.

It was seen that the criteria of "Organic food products are expensive (0.818)" and "Organic food products must be certified (0.654)" represented the awareness level of consumers about organic products. For this reason, it was considered appropriate to call this factor “Level of Consciousness”. The mean factor loadings of these criteria was found as 0.736 and the percentage of variance explained was 8.049%.

Table 22
Rotating factor loads matrix

Variables	Factors			
	1	2	3	4
Those who consume organic food products have stronger immune systems.	**0.840**	0.076	0.111	-0.003
Organic food products are beneficial for the development of children.	**0.776**	-0.009	-0.049	0.263
Organic products are hormone-free.	**0.767**	0.204	0.073	0.058
Consuming organic food products protects me against diseases.	**0.764**	0.021	-0.021	0.103
Consuming organic food products protects against cancer.	**0.754**	0.245	0.206	-0.032
Organic products are of higher quality because they are grown naturally.	**0.745**	0.269	-0.038	0.251
While growing organic products, nature is not harmed.	**0.697**	0.390	0.092	0.169
Organic food products do not contain GMOs.	**0.691**	0.194	0.211	-0.125
Organic food products do not contain chemicals.	**0.664**	0.452	0.073	0.073
Organic food products are beneficial for my health.	**0.656**	0.037	-0.063	0.461
Organic food products smell good.	**0.610**	0.483	0.161	0.130
Organic food products are tastier.	**0.608**	0.357	0.047	0.230
Organic food products are beneficial to sick people.	**0.595**	0.361	0.104	0.301
Organic food products are reliable because they are strictly inspected.	**0.566**	0.361	0.104	0.301
Considering the cost of producing organic food, it is not expensive.	0.153	**0.816**	0.095	0.028
The price I pay for organic food products is not too much for my health.	0.412	**0.551**	0.096	0.246
All organic products on the market are organic.	-0.073	-0.033	**0.797**	0.002
If the fruit is wormy, it is organic.	0.190	-0.006	**0.729**	0.090
The products I buy from the village are organic.	-0.047	0.290	**0.673**	0.129
Organic food products are easy to cook.	0.225	0.345	**0.360**	-0.089
Organic food products are expensive.	0.037	-0.029	0.198	**0.818**
Organic food products must be certified.	0.324	0.334	-0.042	**0.654**

Factors related to the considerations on organic food products were subjected to cluster analysis based on the factor scores obtained (Table 23). Producers at different scales were gathered in different numbers of clusters,

and it was determined that producers at a scale of 10 units gathered in seven clusters. The obtained factors were analysed as seven clusters with the K-means cluster method. The first cluster comprised 0.25% of the main population, the second cluster 23.82%, the third cluster 4.47%, the fourth cluster 41.44%, the fifth cluster 2.48%, the sixth cluster %4.71 and the seventh cluster constituted 22.83% of the population. "Trust" in the first and fourth clusters, "Health and Environmental Benefits" in the second and seventh clusters, "Level of Consciousness" in the third cluster, and "Price" in the sixth cluster were determined as the most prominent factors.

Table 23

Cluster analysis results on judgments about organic food product

Main Factors	Clusters						
	1	2	3	4	5	6	7
Health and Environmental Benefits (F1)	-1.30435	0.60774	-1.79852	-0.16621	-2.62353	-1.29139	0.58547
Price (F2)	-3.02319	0.69681	-1.27002	0.37420	-0.54921	0.87286	-1.24559
Trust (F3)	3.51773	-0.92572	-1.11556	0.75092	-0.93211	-0.48062	-0.01652
Consciousness Level (F4)	-5.03680	-0.18086	1.78902	0.04722	-2.17442	0.76856	-0.11465
Number of observations	1	96	18	167	10	19	92
Ratio in the population (%)	0.25	23.82	4.47	41.44	2.48	4.71	22.83

3.4. Findings Concerning Consumers Not Consuming Organic Products

Consumers who did not consume organic products were also asked whether they wanted to consume organic products (Table 24). It was determined that 91.30% of consumers in the first region, 94.74% of the consumers in the third region, 92.42% of the consumers in the fourth region, 94.21% of the consumers in the fifth region, 95.80% of the consumers in the sixth region expressed a positive opinion about consuming organic products while this ratio was slightly lower in the second region (78.16%). In the study conducted by Sandallıoğlu (2014) in Adana province, 56.3% of the consumers who did not consume organic products stated that they were considering purchasing organic products in the future.

Table 24
Consumers' considerations on organic product consumption

Would you like to consume organic products?	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Total*	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	451	91.30	68	78.16	108	94.74	122	92.42	114	94.21	137	95.80	1,000	91.66
No	43	8.70	19	21.84	6	5.26	10	7.58	7	5.79	6	4.20	91	8.34
Total	494	100.00	87	100.00	114	100.00	132	100.00	121	100.00	143	100.00	1,091	100.00

Consumers who stated that they wanted to consume organic products were also asked in which situations they would buy organic products (Table 25). 66.52% of consumers in the first region, 86.76% of the consumers in the second region, 76.85% of the consumers in the third region, 72.95% of the consumers in the fourth region, 82.46% of the consumers in the fifth region, 70.80% of consumers in the sixth region stated that they would consume organic products if they truly believed that they were organic. 66.30% of consumers in the first region, 60.29% of the consumers in the second region, 71.30% of the consumers in the third region, 72.95% of the consumers in the fourth region, 62.28% of the consumers in the fifth region, 81.75% of consumers stated

that they would consume organic products if they were cheaper. According to the average of the regions, 26.70% of consumers stated that they would consume organic products if their income was higher, and 24.10% of them stated that they would consume more organic products if they could find more in the market. In the study conducted by Gülgör (2017), it was concluded that consumers would consume organic products if they were cheaper, more available in the market, and if they truly believed that they were produced organically.

It was striking that most of the consumers in all regions would buy organic products if they relied on organic products and the products were sold at more affordable prices. Organic products should be included more in the written and visual media.

Table 25
Organic product purchasing criteria of consumers

Criteria	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Total*	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
If I really believe it's organic	300	66.52	59	86.76	83	76.85	89	72.95	94	82.46	97	70.80	722	72.20
If it's cheaper	299	66.30	41	60.29	77	71.30	89	72.95	71	62.28	112	81.75	689	68.90
If I have a higher income	120	26.61	6	8.82	36	33.33	33	27.05	21	18.42	51	37.23	267	26.70
If I can find more in the market	114	25.28	23	33.82	19	17.59	28	22.95	26	22.81	31	22.63	241	24.10
If there are more products from my area	23	5.10	10	14.71	11	10.19	18	14.75	9	7.89	16	11.68	87	8.70
If there are more seasonal products	32	7.10	8	11.76	8	7.41	6	4.92	8	7.02	16	11.68	78	7.80
If I have a small child	51	11.31	2	2.94	6	5.56	2	1.64	4	3.51	4	2.92	69	6.90
If I know organic product/logo better	15	3.33	9	13.24	5	4.63	8	6.56	11	9.65	15	10.95	63	6.30
If there is more product variety	17	3.77	4	5.88	3	2.78	5	4.10	4	3.51	5	3.65	38	3.80
If only there is more information in the media.	14	3.10	3	4.41	2	1.85	3	2.46	4	3.51	10	7.30	36	3.60
If it has better/shorter cooking time	6	1.33	3	4.41	4	3.70	1	0.82	1	0.88	6	4.38	21	2.10
If they last longer	8	1.77	4	5.88	1	0.93	0	0.00	5	4.39	2	1.46	20	2.00
If they are better looking and tasty	9	2.00	1	1.47	2	1.85	3	2.46	4	3.51	1	0.73	20	2.00
If I have more time to look for organic products.	7	1.55	2	2.94	0	0.00	1	0.82	1	0.88	3	2.19	14	1.40
If it contains less packaging	3	0.67	1	1.47	3	2.78	1	0.82	0	0.00	5	3.65	13	1.30

*Multiple options marked

4. Conclusion

With this study, the attitudes and behaviours of consumers in Turkey about purchasing organic food were analysed. The research was conducted in six regions determined according to the socio-economic development index and the regions were compared. Increasing the awareness of consumers about organic foods and their benefits and determining consumer trends in the marketing process of organic foods is also very important for the growth of the domestic market. Since there will be no consumption without production, steps should be taken to enable producers to pass to organic agriculture within the scope of projects. In particular, local governments should identify regions that are suitable for organic farming, with very low or no chemical use, and work for the producers to pass to organic farming. The increase in the number of public markets may contribute to the spread of organic foods and make the organic products easily available to consumers. Besides, the public markets make possible for the producer to sell their goods directly to the consumer and contributes the more reasonable prices of organic products over time by increasing the awareness of organic products. Studies such as creating a healthy database, working to improve consumer awareness, giving priority to advertising activities, teaching the concept of organic products in schools, increasing the specialty stores and making sales by raising the awareness of the consumers in these stores, contributing to the market by increasing and developing the producer unions, can be suggested for the development of the organic market.

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Author Contributions

Başak Aydın: Data input, performed the statistical analysis and wrote the paper.
Murat Doğu: Collected data.
Ayten Aşkın Kılınç: Collected data.
Sunay Demir: Collected data.
Bülent Tarım: Collected data.
Duygu Aktürk: Interpretation of the results.
Filiz Pezikoğlu: Interpretation of the results.
Volkan Burucu: Collected data.
Mustafa Aslan: Interpretation of the results.

Conflicts of Interest

The authors declare that they do not have any conflict of interest.

References

Akgül, A., & Çevik, O. (2003). *İstatistiksel analiz teknikleri*, Emek Ofset, Ankara.

Akın, M., Çiçek, R., İnal, M. E., & Toksarı, M. (2010). Niğde ilindeki tüketicilerin sosyo-demografik özellikleri ile organik gıdalara ilişkin tutum ve bireysel değerleri arasındaki farklılığın incelenmesine yönelik bir araştırma. *Dokuz Eylül Üniversitesi SBE Dergisi*, *12*(1), 29-56. Retrieved from: https://arastirmax.com/en/system/files/dergiler/591/makaleler/12/1/arastirmax-nigde-ilindeki-tuketicilerin-sosyo-demografik-ozellikleri-ile-organik-gidalara-iliskin-tutum-bireysel-degerleri-arasindaki-farkliligin-incelenmesine-yonelik-bir.pdf

Aktürk, D. (2012). Organik ürünlerin pazarlama kanalları: Türkiye için uygun bir model önerisi. *International Food, Agricultural and Gastronomy Congress*, (pp. 1-2), Antalya, Türkiye.

Anonymous (2022). Retrieved from: https://www.tarimorman.gov.tr/Konular/Bitkisel-Uretim/Organik-Tarim/Istatistikler

Armağan, G., & Özdoğan, M. (2005). Ekolojik yumurta ve tavuk etinin tüketim eğilimleri ve tüketici özelliklerinin belirlenmesi. *Hayvansal Üretim*, *46*(2), 14-21. Retrieved from: https://dergipark.org.tr/tr/download/article-file/85119

Ataseven, Y., & Güneş, E. (2008). Türkiye'de işlenmiş organik tarım ürünleri üretimi ve ticaretindeki gelişmeler. *Uludağ Üniversitesi Ziraat Fakültesi Dergisi*, *22*(2), 25-33. Retrieved from: https://dergipark.org.tr/tr/download/article-file/154075

Ben Khadda, Z., Ezrari, S., Radouane, N., Boutagayout, A., El Housni, Z., Lahmamsi, H., Zahri, A., Houssaini, T.S., El Ghadraoui, L., Elamine, Y., & Guiné, Raquel, P.F. (2022). Organic food consumption and eating habit in Morocco, Algeria, and Tunisia during the COVID-19 pandemic lockdown. *Open Agriculture*, *7*(1), 21-29. doi: https://doi.org/10.1515/opag-2022-0064

Cavite, H.J., Mankeb, P., Kerdsriserm, C., Joedsak, A., Direksri, N., & Suwanmaneepong, S. (2022). Do behavioral and socio-demographic factors determine consumers' purchase intention towards traceable organic rice? Evidence from Thailand. *Organic Agriculture*. doi: https://doi.org/10.1007/s13165-022-00387-1

Cengiz, H., & Şenel, M. (2017). Tüketicilerin organik gıda satın alma motivasyonlarının zaltman metafor çıkarım tekniği aracılığıyla incelenmesi. *Karabük Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *7*(1), 56-69. Retrieved from: https://dergipark.org.tr/tr/pub/joiss/issue/30785/323318

Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2010). *Sosyal bilimler için çok değişkenli istatistik*. Pagem Akademi, Ankara.

Doğan, H.G., & Gürel, E. (2016). Kırşehir ili merkez ilçede yaşayan tüketicilerin organik ürün tüketimindeki tutum ve davranışlarının belirlenmesi. *Gaziosmanpaşa Üniversitesi Ziraat Fakültesi Dergisi*, *33*(3), 147-156. doi: https://doi.org/10.13002/jafag1033

Eti, H.S. (2014). *Marketing of organic food and analysis of consumer attitude and behavior towards organic food* (Unpublished doctoral dissertation). Namık Kemal University, Tekirdağ, Turkey.

Eyinade, G.A., Mushunhe, A.M., & Gbolahan, S.F. (2021). The willingness to consume organic food: A review. *Food and Agricultural Immunology*, 32(1), 78-104, doi: https://doi.org.10.1080/09540105.2021.1874885

Gülgör, E. (2017). *Economy of organic farming and consumer trends* (Unpublished master's thesis). Namık Kemal University, Tekirdağ, Turkey.

Hair, J.F., Anderson, R.E., Tahtam, R.L., & Black, W.C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, N.J. : Prentice Hall.

İlter, B., & Yılmaz, B.S. (2016). Understanding determinants of organic food consumption: Turkey example. *Acta Universitatis Danubius. OEconomica, 12*(4), 372-389. Retrieved from: https://econpapers.repec.org/article/dugactaec/y_3a2016_3ai_3a4_3ap_3a372-389.htm

Karabaş, S., & Gürler, A.Z. (2012). Organik ürün tercihinde tüketici davranışları üzerine etkili faktörlerin logit regresyon analizi ile tahminlemesi. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 5*(10), 129-156. doi: https://doi.org/10.14520/adyusbd.272

Kalaycı, Ş. (2009), *SPSS uygulamalı çok değişkenli istatistik teknikleri* (4. Baskı). Asil Yayın Dağıtım, Ankara.

Kleinbaum, D.G., Lawrence, L.K., & Keith, E.M., (1998). *Applied regression analysis and other multivariable methods* (3rd ed.). Duxburry Press, London.

Lewis, B.M.S. (1994). *Factor analysis and related techniques*. Sage Publications, London.

Newbold, P. (1995). *Statistics for business and economics*. Prentice Hall International Editions.

Özer, O. G. (2008). *Analysis of organic agricultural products in terms of demand: Çanakkale case* (Unpublished master's thesis), Çanakkale Onsekiz Mart University, Çanakkale, Turkey.

Sandallıoğlu, A. (2014). *Consumption of organic agricultural products and consumer tendencies in Adana* (Unpublished doctoral dissertation), Çukurova University, Adana, Turkey.

Sarıkaya, N. (2007). Organik ürün tüketimini etkileyen faktörler ve tutumlar üzerine bir saha çalışması. *Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *14*(2), 110-125. Retrieved from: https://dergipark.org.tr/tr/pub/kosbed/issue/25706/271251

Sharma, S. (1996). *Applied multivariate techniques*. John Wiley & Sons Inc., New York.

Shepherd, R., Magnusson, M., & Sjödén, P.O. (2005). Determinants of consumer behavior related to organic foods. *Ambio, 34*(4-5), 352–359. doi: https://doi.org/10.1579/0044-7447-34.4.352

Turhan, Ş. (2005). Tarımda sürdürülebilirlik ve organik tarım. *Tarım Ekonomisi Dergisi*, *11*(1), 13-24. Retrieved from: https://dergipark.org.tr/tr/download/article-file/253316

Unal, S., Görgün Deveci, F., & Yıldız, T. (2019).Do we know organic food consumers? The personal and social determinants of organic food consumption. *Istanbul Business Research, 48*(1), 1-35 doi: https://doi.org/10.26650/ibr.2019.48.0019