TÜRKİYE' DE ORGANİK ÜRÜN TÜKETİMİNİN MEVCUT DURUMU VE TÜKETİCİ EĞİLİMLERİ

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Öz

Bu araştırmada da, Türkiye' deki tüketicilerin organik ürünler konusundaki yaklaşımları ve onların organik ürün tüketimleri üzerindeki etkili faktörler araştırılmıştır. Bu amaçla, 7 coğrafi bölgedeki 7 büyük şehirde 1508 anket yapılmıştır. İl bazında frekans tabloları oluşturulmuş ve yorumlanmıştır. İstatistiksel analiz olarak logistik regresyon analizi yapılmıştır. Analiz sonuçlarına göre, organik ürün tüketme olasılığı üzerinde istatistiksel olarak anlamlı görülen değişkenler, tüketicilerin cinsiyeti, medeni durumu, mesleği, aylık geliri, organik ürün tanımını bilip bilmeme durumları, organik ürünlere ait sertifika olması gerektiğini bilip bilmeme durumu, organik ürünler konusundaki bilgi kaynakları ve yaşadıkları şehirler olarak belirlenmiştir. Ülkedeki organik ürün tüketme olasılığı yaklaşık % 92 olarak belirlenmiştir. Tüketicilerin, yaşadıkları yerler yani bölgesel ve kültürel farklılıkları dikkate alınarak, bütün tüketicilerin organik ürün konusunda bilgi sahibi olacak argümanların kullanılması, toptan ve perakende pazarlarda bu ürünlerin satışı ile tüketicilerde farkındalık yaratılması, kitle iletişim araçları ile tüketici bilincinin yeterli düzeye getirilmesi ve her gelir grubunda tüketicinin ulaşabileceği düzeyde bir fiyat istikrarının sağlanması için arz talep dengesi yönündeki çalışmalara hız kazandırılması organik ürünlerin yaygınlaştırılmasında ve sağlıklı tüketim olgusunda farklı yöntemler olarak değerlendirilebilir.

Anahtar Kelimeler: Organik tüketim, Tüketici, Türkiye, Logistik regresyon, Tüketici tercihi.

EXISTING STATE OF ORGANIC PRODUCT CONSUMPTION IN TURKEY AND THE CONSUMER TRENDS

Abstract

In this research, the approaches of the consumers to organic products in Turkey and the effective factors on their consumption of organic products have been researched. For this purpose, 1508 surveys have been conducted in the 7 biggest provinces of the 7 geographical regions throughout Turkey. On the basis of each province, frequency tables have been set and interpreted. Logistic regression analysis has been carried out as the statistical analysis. According to the results of the analysis, statistically significant variables on organic product consumption have been determined as gender, marital status, occupation, monthly income of consumers, whether they know the definition of organic product or they know the necessity of a certificate for the organic products, their information resources on organic products, and the province they live in. The probability of the organic product consumption in the country has been determined as 92%. By considering the places where the consumers live, that is to say, the regional and the cultural differences, the use of the arguments that will help all the consumers to gain knowledge about organic products, the selling of these products in wholesale and retail markets in order to create awareness, raising consumer awareness to an adequate level through mass media and acceleration of the researches on the balance of supply and demand in order to provide price stabilization for each income group can be considered as different methods to popularize organic products and the fact of healthy consumption.

Keywords: Organic consumption, Consumer, Turkey, Logistic regression, Consumer preferences.

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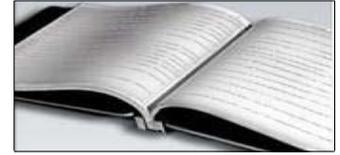
Introduction

Organic food products are the food, which are offered to consumption for people without using any artificial, chemical, or unnatural substances or by allowing the usage of these substances with certain amounts through cultivation and in some phases of the process, which is called "from field to fork." The marketing of organic products in Turkey is increasing and gaining importance day by day as it is throughout the world.The acceptance of organic products by consumers and their preference to use these products depend on many factors. Psychological and socio-economical factors have a very important place among the others. (McEachern and McClean, 2002).

Since the period, which is called green revolution starting in 1950s, agriculture has been transformed from intensive cultivation to extensive cultivation all over the world. In other words, a period of intense input had already started to be involved in agricultural production. This period, along with the ecological problems, has started to create negative effects on people's health and brought along many problems in economical field such as surplus production (Gürler, 2012). By 2000s, the fact that this process disturbs the natural balance, devastates many things as well as the genetic codes of human beings has been understood and methods to combat this situation have been developed. These are the elements such as integrated pest management, biological warfare and organic production.

Although the natural disturbance of the extensive cultivation has started an irremediable process on some issues, humans have become aware of the consumption substances. With this awareness, organic agriculture and organic consumption system aims to present a structure that is human and eco-friendly in order to construct the natural balance that has been disturbed (Merey, 2008).

Throughout the world, in most of the developed countries such as the USA, the EU Countries, the UK, the Netherlands, and Japan, susceptibility and preferences to consume healthy food are increasing day by day. The production fields and the number of producers are increasing in organic agriculture in order to satisfy this demand. On the other hand, the organic product market throughout the world is expanding and the most part of this market is located in EU and the USA. Consequently, the production and consumption of organic food, which is a subject to both domestic trade and foreign trade, is acquiring a different dimension day by day throughout the world. Among these countries, the consumption of organic products in Turkey has an uptrend and a range of organic products more than 250 are being consumed (Uygur, 2005, Demiryürek, 2004). Ecological markets, which have recently been founded, organic product aisles, and the expansion of organic production fields are the basic indicators of this situation. Scientists have done substantial amount of research about this situation in which supply and demand balance is tried to be maintained. These can be listed as studies which include consumer behaviors, attitudes, tendencies and new trends about organic products (McEachern and McClean, 2002, Harrison et al.,2005, Shafie and Rennie, 2009, Akın et al.,2010, Dickson-Spillmann et al.,2011, Stolz et al.,2011, Van loo ve ark., 2011, Guilebert and Wood, 2012, Marette et al.,2012, Manuela et al.,2013, Karaman et al.,2013, Aschemann-Witzel et al.,2013, Onurlubaş and Yılmaz, 2013, Goetzke et al.,2014, Vitterso andTangeland, 2014, Rödiger and Hamm, 2015, Yazdanpanah et al.,2015, Janssen et al.,2015).

In this study, the attitudes and behaviours of the consumers on organic product consumption in Turkey have been researched and the regional differences have been

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presented, as well. The findings have been interpreted quantitatively with the support of statistical methods.

Material and Method

The main material of the research consists of the survey forms carried out in the 7 biggest provinces in the 7 geographical regions of Turkey. It has been assumed that the 7 provinces at issue represent their own regions when they are considered separately and they represent Turkey when considered as a whole. In the research, in order to determine the number of the surveys in each province, when the information about main population is available and it is more than 100.000, it has been based on the forecast that the margin of error can be calculated within a certain confidence interval (Lajimi and Briz, 1992; Şengül et al, 1998). From this point of view, the total population of these 7 provinces has been determined as 29, 785. 499 (Tuik, 2014). The formula to determine the sample size after determining the main population is shown below (Güneş and Arıkan, 1988);

$$n = \frac{N * p * q}{(N-1) * D + (p * q)} \qquad (1)$$

N= Main Population (29 785 499)

p=0,5
q=0,5
D=(e/z)^2 (0, 02524/1,96)^2
D= Error Rate   (0,000165828)
z= statistics value (1,96, %95 confidence interval)
n=1508 As a result of the calculation, the sample size has been calculated as 1508 with the margin error of 0,02524. The 1508 questionaires have been conducted in the 7 provinces randomly. It's determined that eight respondents filled questionnaire wrong and incomplete from sample, thus data has evaluated as 1500 quastionnaire. The range of the surveys on the province basis has been applied relatively. The most part of the surveys has been conducted in Istanbul. This is due to the fact that Istanbul is the most populated province in Turkey. After the surveys were conducted, the acquired data have been illustrated on tables by giving the frequency values on province basis.

In the data analysis method of the research, Logit Model, which is one of the qualitative variables econometric models, has been used. In the Logit Model analysis, the order is as below: Firstly, the logit model was estimated, the probability ratio was determined and the coefficients and odds ratio were obtained. Then, marginal odds ratio was obtained and finally by calculating the % percentage changes, the results were interpreted. The logit model, which has been derived from normal independent distribution function, is stated in Equation 2;

$$Pi = E(Yi = 2 \mid Xi) = F(Ii)) = F(\beta 0 + \beta 1 Xi) = \frac{1}{1 + e^{-Ii}} = \frac{1}{1 + e^{-(\beta 0 + \beta 1 Xi)}} \qquad (2)$$

Whereas Ii has a value between -∞ and + ∞, Pi has a value between 0-1 and there is a nonlinear relationship between Pi and Ii. In this case, it can not be analysed with the OLS method. Yet, it can be transformed into a linear form with some transactions.

$$e^{Ii} = \frac{Pi}{1 - Pi} \qquad (3)$$

is obtained. Pi/(1-Pi) is the odds ratio. In other words, it is the ratio of probability of occurrence to non-occurrence. Finally, when the natural logarithm of both parts of the equation is calculated, Equation 4 is obtained;

$$Li = Ln\left(\frac{Pi}{1 - Pi}\right) = Ii = \beta 0 + \beta 1 Xi \qquad (4)$$

is obtained (Kramer, 1991).

Li, which is the logarithm of the probability ratio here, has been transformed into a linear form not only according to Xi but also according to the coefficients. However, an equation which shows the exchange ratio of Pi according to Xi hinges on not only β1 but also the level of the change probability and which is described as marginal odds ratio can be shown as below;

$$\partial Pi/\partial Xi = Pi\,(1\text{-}Pi)\,\beta 1 \qquad (5)$$

The obtained marginal odds ratio presents the effect of 1 unit change in Xi on Pi. On the other hand, when the percentage change in probability ratio needs to be calculated, Equation 6 can be used (Özer, 2004);

$$\% (Pi/1\text{-}Pi) = (exp\,(\beta i)\text{-}1)*100 \qquad (6)$$

The variables in the model and the codes of these variables can be defined as below.

Table 1. The most suitable variables and their codes used in binary logistic regression analysis

The Name Of The Variable	The Code Of The Variable
Gender	Gen
Age	Age
Marital Status	Marstat
Job	Job
Educational Status	Educ
Monthly Revenue	Renev
Knowing The Definition of Organic Plant	Orgplant
Being Informed about The Necessity Of The Certificate for Organic Products	Sertif
Information Resource about Organic Products	Infres
Province	Prov

Research Findings

The socio-demographical features of the consumers attended the research have been illustrated in Table 2 and Table.

Table 2. The socio-demographical features of the consumers attended the research -I

| | | | \multicolumn{7}{c}{Provinces} | | Total |
			İstanbul	Ankara	İzmir	Erzurum	Antalya	Samsun	Gaziantep	
Gender	Woman	N	211	87	134	96	86	101	105	820
		%	50,00	48,30	74,40	53,30	48,00	56,10	58,70	54,70
	Man	N	211	93	46	84	93	79	74	680
		%	50,00	51,70	25,60	46,70	52,00	43,90	41,30	45,30
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Age	18-25	N	166	80	45	59	67	81	71	569
		%	39,30	44,40	25,00	32,80	37,40	45,00	39,70	37,90
	26-30	N	110	23	24	35	44	26	31	293
		%	26,10	12,80	13,30	19,40	24,60	14,40	17,30	19,50
	31-40	N	86	24	35	31	28	32	27	263
		%	20,40	13,30	19,40	17,20	15,60	17,80	15,10	17,50
	41-50	N	45	29	40	29	23	24	29	219
		%	10,70	16,10	22,20	16,10	12,80	13,30	16,20	14,60
	51-60	N	8	14	23	16	9	10	10	90
		%	1,90	7,80	12,80	8,90	5,00	5,60	5,60	6,00
	61-$^+$	N	7	10	13	10	8	7	11	65
		%	1,70	5,60	7,20	5,60	4,50	3,90	6,10	4,30
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Marital Status	Widow/er	N	27	13	20	17	13	16	16	122
		%	6,40	7,20	11,10	9,40	7,30	8,90	8,90	8,10
	Single	N	241	96	68	69	89	96	82	741
		%	57,10	53,30	37,80	38,30	49,70	53,30	45,80	49,40
	Married	N	154	71	92	94	77	68	81	637
		%	36,50	39,40	51,10	52,20	43,00	37,80	45,30	42,50
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Occupational Status of Husband/Wife	No	N	62	26	33	40	39	26	19	245
		%	40,26	36,62	35,90	42,60	50,60	38,24	23,46	38,46
	Yes	N	92	45	59	54	38	42	62	392
		%	59,74	63,38	64,10	57,40	49,40	61,76	76,54	61,54
	Total	N	154	71	92	94	77	68	81	637
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Occupation Groups	Civil Servant	N	60	29	45	39	35	34	19	261
		%	14,22	16,12	25,00	21,67	19,55	18,89	10,61	17,40
	Labourer	N	114	14	19	34	23	21	45	270
		%	27,01	7,78	10,56	18,89	12,85	11,67	25,14	18,00
	Self-employed	N	56	26	20	17	18	22	21	180
		%	13,27	14,44	11,11	9,44	10,06	12,22	11,73	12,00
	Housewife	N	40	26	34	23	18	17	27	185
		%	9,48	14,44	18,89	12,78	10,06	9,44	15,08	12,33
	Unemployed	N	47	11	18	18	17	25	20	156
		%	11,14	6,11	10,00	10,00	9,50	13,89	11,17	10,40
	Retired	N	15	11	15	13	17	16	14	101
		%	3,55	6,11	8,33	7,22	9,50	8,89	7,82	6,73
	Student	N	84	63	29	36	51	44	33	340
		%	19,91	35,00	16,11	20,00	28,48	24,44	18,45	22,67
	Other	N	6	0	0	0	0	1	0	7
		%	1,42	0,00	0,00	0,00	0,00	0,56	0,00	0,47
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

When the socio-demographical features of the consumers attended to the research are examined, it has been determined that 54,70% of the consumers are women 45,3% are men.

Female consumers are mainly in the province of İzmir with a percentage of 74,40%, whereas at the least they are in the province of Antalya with 48,00%. When the age groups of the consumers are examined, it has been seen that 37,90% of them is aged between 18 – 25. 45,00% of the consumers aged between 18 – 25 is in the province of Samsun. When their marital status is examined, it has been seen that 49,90% of them are single, 42,50% are married. Husbands or wifes of 61,54% of the married consumers are working in a job. It has been determined that the highest percentage of working husbands and wifes is in Gaziantep with 76,54%. When the occupation groups of the consumers are examined, it has been determined that 22,67% are students, 18,00% are labourers and 17,40% are civil servants. It has been determined that 35,00% of the student consumers are in the province of Ankara, 27,01% of the labourer consumers are in Istanbul and 25,00% of the civil servant consumers are in Izmir.

Table 3. The socio-demographical features of the consumers attended the research -II

			İstanbul	Ankara	İzmir	Erzurum	Antalya	Samsun	Gaziantep	Total
			Provinces							**Total**
The number of People Living in the Same House	1-3	N	208	86	92	109	87	102	73	757
		%	49,29	47,78	51,11	60,56	48,60	56,67	40,78	50,47
	4-6	N	202	85	86	68	88	72	96	697
		%	47,87	47,22	47,78	37,78	49,16	40,00	53,64	46,46
	7-9	N	12	7	2	3	4	6	5	39
		%	2,84	3,89	1,11	1,67	2,23	3,33	2,79	2,60
	10-+	N	0	2	0	0	0	0	5	7
		%	0,00	1,11	0,00	0,00	0,00	0,00	2,79	0,47
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Educational Status	Illiterate	N	0	5	2	6	0	5	7	25
		%	0,00	2,80	1,10	3,30	0,00	2,80	4,00	1,67
	Literate	N	6	3	2	8	0	5	12	36
		%	1,40	1,70	1,10	4,40	0,00	2,80	6,70	2,40
	Elementary School	N	49	26	31	37	33	19	43	238
		%	11,60	14,40	17,20	20,60	18,40	10,60	24,00	15,87
	Highschool	N	160	46	44	46	37	49	40	422
		%	37,90	25,60	24,40	25,60	20,70	27,20	22,30	28,13
	Bachelor's	N	185	93	95	78	95	93	61	700
		%	43,80	51,70	52,80	43,30	53,10	51,70	34,10	46,67
	Master's	N	21	6	4	2	8	8	11	60
		%	4,90	3,40	2,20	1,10	4,50	4,40	6,10	4,00
	Doctorate's	N	1	1	2	3	6	1	5	19
		%	0,20	0,60	1,10	1,70	3,40	0,60	2,80	1,26
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Status of Monthly Revenue(TL)	0-1000	N	16	24	7	27	4	23	15	115
		%	3,80	13,30	3,90	15,00	2,20	12,80	8,40	7,70
	1001-2000	N	129	64	28	79	59	63	70	492
		%	30,60	35,60	15,60	43,90	33,00	35,00	39,10	32,80
	2001-3500	N	186	64	50	52	67	63	72	554
		%	44,10	35,60	27,80	28,90	37,40	35,00	40,20	36,90
	3501-5000	N	70	21	57	16	22	25	19	230
		%	16,60	11,70	31,70	8,90	12,30	13,90	10,60	15,30
	5001-7000	N	16	6	28	4	9	4	3	70
		%	3,80	3,30	15,60	2,20	5,00	2,20	1,70	4,70
	7001-+	N	5	1	10	2	18	2	0	38
		%	1,20	0,60	5,50	1,20	10,10	1,10	0,00	4,00
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Montly mean food expenditure (TL)			678,59	629,61	867,78	527,50	489,27	611,42	565,95	633,12

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When the number of people living in the same house with the consumers is examined, it is determined that 50,47% of consumers live with 1 – 3 people in the same house and 60,56% of them live in Erzurum. When the educational status of the consumers is examined, it has been observed that 46,67% are university graduates. 52,80% of the university graduates state that they live in Izmir. When the monthly revenue of the consumers is examined, it is found that 36,90% of them earn a revenue between 2001 – 3500 TL. It has been observed that 44,10% of the consumers in this group of revenue live in Istanbul

Table 4. Factors that the consumers consider while purchasing fresh fruits and vegetables

Factors that the consumers consider while purchasing fresh fruits and vegetables	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	N	%	N	%	N	%	N	%	N	%
Delicious	1073	71,50	364	24,30	45	3,00	16	1,10	2	0,10
Product must be packaged	542	36,10	409	27,30	315	21,00	185	12,30	49	3,30
Freshness	1148	76,50	305	20,30	32	2,10	11	0,70	4	0,30
Price	854	56,90	455	30,30	115	7,70	60	4,00	16	1,60
Appearance	875	58,30	414	27,60	149	9,90	49	3,30	13	0,90

When the factors that the consumers consider while purchasing fresh fruits and vegetables are examined, it has been determined that the ratio of the consumers who strongly agree that the product must be delicious is 71,50%, the ratio of the consumers who strongly agree that the product must be packaged is 36,10%, the ratio of those who strongly agree on the factor of product freshness is 76,50%, the ratio of those who strongly agree on the factor of the product's price is 56,90% and the ratio of those who strongly agree on the appearance of the product is 58,30%. It has been understood that consumers mostly agree on the criteria that must be considered while purchasing products.

Table 5. The places where consumers shop for fresh fruits and vegetables and their knowledge level about organic products

			Provinces							Total
			İstanbul	Ankara	İzmir	Erzurum	Antalya	Samsun	Gaziantep	
The Places Where Consumers Shop For Fresh Fruits And Vegetables	District Bazaar	N	31	22	17	32	9	20	18	149
		%	7,3	12,2	9,4	17,8	5,0	11,1	10,1	9,93
	Greengrocer	N	79	45	39	54	52	31	46	346
		%	18,7	25,0	21,7	30,0	29,1	17,2	25,7	23,07
	Superrmarket	N	312	113	124	94	118	129	115	1005
		%	73,9	62,8	68,9	52,3	66,0	71,7	64,3	67,00
	Total	N	422	180	180	180	179	180	179	1500
		%	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
The Knowledge Status of The Definition of Organic Product	They are branded products.	N	31	9	3	14	5	3	14	79
		%	7,3	5,00	1,67	7,78	2,79	1,67	7,82	5,26
	They are plants that are highly productive.	N	48	20	16	21	26	18	35	184
		%	11,4	11,1	8,9	11,7	14,5	10,0	19,6	12,27
	They are products that are well-shaped and non-perishable.	N	17	9	7	13	14	12	16	88
		%	4,0	5,0	3,9	7,2	7,8	6,7	8,9	5,87
	They are products that fertilisers and	N	20	6	1	9	6	4	16	62
		%	4,7	3,3	0,6	5,0	3,4	2,2	8,9	4,13

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pesticides are used intensively while cultivating.									
They are products that pesticides, hormones and chemicals are not allowed or partly allowed to use in.	N	306	136	153	123	128	143	98	1087
	%	72,5	75,6	85,0	68,3	71,5	79,4	54,7	72,47
Total	N	422	180	180	180	179	180	179	1500
	%	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

When the places where consumers shop for fresh fruits and vegetables are examined, It is determined that most of the consumers shop in supermarket with 67,00% and 73,90% of those who shop in supermarkets live in Istanbul. When the consumers' knowledge status of the definition of organic product is examined, it is observed that 72,47% of the consumers know the definition, as products in which pesticides, hormones and chemicals are not allowed or partly allowed to use. It is determined that 85,00% of the consumers who have this knowledge live in Izmir.

Table 6. The Status of Knowing That Organic Products Must Have a Certificate and The Status Of Buying Organic Products

			Provinces							Total
			İstanbul	Ankara	İzmir	Erzurum	Antalya	Samsun	Gaziantep	
The Status of Knowing That Organic Products Must Have a Certificate	No	N	202	85	75	129	110	95	95	791
		%	47,87	47,22	41,70	71,70	61,50	52,70	53,00	52,73
	Yes	N	220	95	105	51	69	85	84	709
		%	52,13	52,78	58,30	28,30	38,50	47,30	47,00	47,27
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
The Status Of Buying Organic Products	No	N	122	38	14	45	32	26	24	301
		%	28,90	21,11	7,80	25,00	17,90	14,40	13,410	20,07
	Yes	N	300	142	166	135	147	154	155	1199
		%	71,10	78,89	92,20	75,00	82,10	85,60	86,59	79,93
	Total	N	422	180	180	180	179	180	179	1500
		%	100,0	100,0	100,00	100,00	100,00	100,00	100,00	100,00
*The Reason Why They Do not Buy Organic Products	Expensive	N	49	12	6	19	22	13	9	130
		%	40,20	33,30	42,90	42,20	68,80	50,00	40,90	43,80
	Low Revenue	N	60	11	1	9	7	8	3	99
		%	49,20	30,60	7,10	20,00	21,90	30,80	13,60	33,30
	The Belief That Inorganic Products are not Unhealthy	N	14	3	1	11	6	9	3	47
		%	11,50	8,30	7,10	24,40	18,80	34,60	13,60	15,80
	Lack of Confidence	N	10	8	4	9	0	2	0	33
		%	8,20	22,20	28,60	20,00	0,00	7,70	0,00	11,10
	Lack of Knowledge	N	24	16	2	10	10	7	5	74
		%	19,70	44,40	14,30	22,20	31,20	26,90	22,70	24,90
	Other	N	2	6	2	3	0	2	3	18
		%	1,60	16,70	14,30	6,70	0,00	7,70	15,00	6,10

*It exceeds 100% due to the fact that consumers choose more than one answer.

When the consumers' status of knowing that organic products must have a certificate is examined, it has been observed that 52,73% of them are unaware of such a certificate and it is determined that 71,70% of the consumers who are unaware of this certificate live in Erzurum. When the consumers' status of buying organic products is examined, it has been determined that 79,93% of the consumers buy organic products and 92,20% of those who buy organic products live in Izmir. When the reason why consumers do not buy organic products is examined, the factors such as the costliness of the product and the low revenue come to the forefront. While the ratio of the consumers who think that the products are expensive is 43,80%, the ratio of the consumers who cannot buy organic products because of low revenues is 33,30%. The consumers who think that they are expensive mainly live in Antalya with 68,80% and the consumers who states that they cannot buy because of the low revenues mostly live in Istanbul with 49,20%.

Table 7. Organic Products That are Consumed, The Place to Them and The Status Of Paying More For Them

			Provinces							Total
			İstanbul	Ankara	İzmir	Erzurum	Antalya	Samsun	Gaziantep	
Organic Products Consumed*	**Tomato**	N	243	122	135	118	124	121	116	979
		%	80,70	84,70	81,30	87,40	84,40	78,10	73,90	81,20
	Pepper	N	195	101	116	95	105	91	88	791
		%	64,80	70,10	69,90	70,40	71,40	58,70	56,10	65,60
	Cucumber	N	218	99	115	99	114	97	95	837
		%	72,40	68,80	69,30	73,30	77,60	62,60	60,50	69,50
	Watermelon	N	126	54	55	43	81	59	53	471
		%	41,90	37,50	33,10	31,90	55,10	38,10	33,80	39,10
	Hazelnut	N	103	55	54	31	61	60	62	426
		%	34,20	38,20	32,50	23,00	41,50	38,70	39,50	35,40
	Olive Oil	N	119	72	75	54	86	89	96	591
		%	39,50	50,00	45,20	40,00	58,50	57,40	61,10	49,00
	Chick Pea	N	52	36	60	16	32	36	57	289
		%	17,20	25,00	36,10	11,90	21,80	23,20	36,30	23,90
	Dried Grapes	N	73	22	55	28	32	30	67	307
		%	24,10	15,30	33,10	20,70	21,80	19,40	42,70	25,40
	Dried Fig	N	84	26	54	27	35	29	60	315
		%	27,70	18,10	32,50	20,00	24,00	18,80	38,20	26,10
	Lentil	N	50	24	42	13	30	26	54	239
		%	16,60	16,70	25,30	9,60	20,50	16,80	34,40	19,80
	Honey	N	126	62	72	59	101	107	97	624
		%	41,60	43,10	43,40	43,70	69,20	69,00	61,80	51,70
	Tomato Paste	N	103	37	43	31	54	65	55	388
		%	34,00	25,70	25,90	23,00	37,00	41,90	35,30	32,20
	Egg	N	134	73	64	72	55	85	53	536
		%	44,20	50,70	38,60	53,30	37,70	54,80	33,80	44,40
	Products That Are not Food	N	50	18	35	11	12	18	30	174
		%	16,50	12,50	21,10	8,10	8,20	11,60	19,10	14,40
	Meat	N	70	42	34	44	44	64	61	359
		%	23,10	29,20	20,50	32,60	30,10	41,30	38,90	29,80
	Milk	N	115	74	49	60	41	92	65	496
		%	38,10	51,40	29,50	44,40	28,10	59,40	41,40	41,20
*It exceeds 100% due to the fact that consumers choose more than one answer										
The Status of Paying More For Organic Products	**No**	N	204	68	52	76	61	56	69	586
		%	48,30	37,80	28,89	42,20	34,10	31,12	38,50	39,07
	Yes	N	218	112	128	104	118	124	110	914
		%	51,70	62,20	71,11	57,80	65,90	68,88	61,50	60,93
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,0	100,00	100,00	100,00	100,00	100,00
The Place to get	**Ecological District Bazaar**	N	186	121	106	66	103	113	83	778
		%	44,1	67,22	58,9	36,70	57,50	62,80	46,40	51,87

Organic Products	Supermarket	N	230	55	73	107	74	63	88	690
		%	54,5	30,56	40,60	59,40	41,30	35,00	49,20	46,00
	Internet	N	6	4	1	7	2	4	8	32
		%	1,4	2,220	0,60	3,90	1,10	2,20	4,50	2,13
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

When the organic products that the people consume are examined, tomato (81,20%), cucumber (69,50%), and pepper (65,60%) rank among the top three. However, it has been observed that honey (51,70%), olive oil (49,00%), and egg (44,40%) are consumed considerably. It has also been determined that 60,93% of these consumers are eager to pay more for the organic products. İzmir comes to the forefront as the city in which 71,11% of people that are eager to pay more for organic products live. It has been determined that 51,87% of the consumers get the organic products from ecological district bazaar and 46,00% of them get from supermarkets. It has been determined that 67,22% of the consumers who buy the products from ecological district bazaar live in Ankara and 59,40% of the consumers who buy the products from supermarkets live in Erzurum.

Table 8. The Thoughts About The Promotion Of Organic Products And Information Resources About These Products

			Provinces							Total
			İstanbul	Ankara	İzmir	Erzurum	Antalya	Samsun	Gaziantep	
The Status Whether Organic Agriculture is Advertised Adequately or Not	No	N	282	137	139	154	146	172	129	1159
		%	66,80	76,10	77,20	85,60	81,60	95,60	72,10	77,30
	Yes	N	140	43	41	26	33	8	50	341
		%	33,20	23,90	22,80	14,40	18,40	4,40	27,90	22,70
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Information Resources about Organic Products	Visual Media	N	92	31	60	43	55	28	40	349
		%	21,80	17,20	33,30	23,90	30,70	15,60	22,30	23,30
	Friends and Relatives	N	139	88	38	65	43	64	74	511
		%	32,90	48,90	21,10	36,10	24,00	35,60	41,30	34,10
	Printed Media	N	77	27	21	24	33	27	26	235
		%	18,20	15,00	11,70	13,30	18,40	15,00	14,50	15,70
	Internet	N	62	18	35	30	36	37	23	241
		%	14,70	10,00	19,40	16,70	20,10	20,60	12,80	16,10
	Experts	N	52	16	26	18	12	24	16	164
		%	12,30	8,90	14,40	10,00	6,70	13,30	8,90	10,90
	Total	N	422	180	180	180	179	180	179	1500
		%	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

When the consumers' thoughts whether organic products are advertised adequately or not are examined, 77,30% of them stated that they think that the advertising is not enough. It has been observed that 95,60% of the consumers who think so live in Samsun. It is also possible to see that 34,10% of the consumers' information resources about organic products are through friends and relatives. It has been determined that 48,90% of the consumers whose information resources are friends and relatives live in Ankara.

Empirical Findings

In the research, logistic regression analysis has been done with the variables which are thought to affect the status of consuming organic products. Before proceeding to the analysis

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phase, descriptive statistics related to the variables used in the model have been given and they are illustrated in Table 9.

Table 9. Descriptive statistics related to the variables used in the model

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Prov	1500	1	7	5270	3,51	2,138
Gen	1500	1	3	2181	1,45	0,499
Age	1500	1	21	3681	2,45	1,552
Marstat	1500	1	3	3515	2,34	0,623
Job	1500	1	7	3510	3,03	1,646
Educ	1500	0	35	6529	4,35	1,320
Renev	1500	0	9	4264	2,84	1,101
Orgplant	1500	0	5	6387	4,26	1,310
Sertif	1500	0	21	734	0,49	0,740
Infres	1500	1	5	3860	2,57	1,299

Before proceeding to the results of logistic regression analysis test, the goodness of fit test of the model which would be formed with the present variables has been carried out. Hosmer-Lemeshow test has been used for the goodness of fit test and results are illustrated in Table 10.

Table 10. The Results of Hosmer-Lemeshow Test

Chi-Square	Df	Significant
14,938	8	0,060

According to the results of Hosmer-Lemeshow test, Chi-Square value is 14,938 and significance level is obtained as p=0,060. This gives positive information about the model's goodness of fit (p>0,05). After this phase, it is possible to proceed to the phase of forming logistic regression model. The most suitable results of logistic regression analysis are illustrated in Table 11.

Table 11. The most suitable results of binary logistic regression analysis

Variables	β	S.E	Wald	Sig.	Odds ratio	Marj. odds ratio	(Exp(β)-1)*100
Constant	-1,373	0,604	5,163	0,023**	-	-	-
Gen	-0,462	0,155	8,844	0,003*	0,630	-0,035	-36,99
Age	0,050	0,056	0,772	0,380	1,051	0,004	5,12
Marstat	0,224	0,116	3,749	0,053***	1,252	0,017	25,10
Job	-0,138	0,050	7,623	0,006*	0,871	-0,011	-12,89
Educ	0,047	0,062	0,561	0,454	1,048	0,004	4,81
Renev	0,175	0,082	4,575	0,032**	1,191	0,013	19,12
Orgplant	0,317	0,053	36,104	0,000*	1,374	0,024	37,30
Sertif	0,538	0,159	11,477	0,001*	1,713	0,041	71,26
Infres	0,115	0,063	3,322	0,068***	1,122	0,009	12,19
Prov	0,194	0,038	26,646	0,000*	1,214	0,015	21,41

*at % 1 level significant, ** at % 5 level significant, *** at % 10 level significant

As a result of the logit model analysis, slope coefficients measure (Pi/1-Pi) change in the logit in return of one-unit change in the independent variable. However, for the certain values of the variables, it is necessary to estimate the event's own probability (P) not the probability ratio of the event (Özer, 2004). Thus, coefficient estimators were obtained and then the analysis have been carried out. As a result of the analysis,

$$P = \frac{1}{1 + e^{-2,39157}}$$

$$P = 0,916 \approx \% \, 92$$

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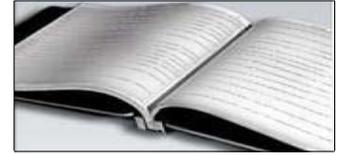
According to the "P" value, the probability of the consumers in Turkey to consume organic products has been calculated as 92%. Marginal effects of the factors, which are thought to be related with this consumption, have been calculated and illustrated in Table 10.

According to this, it has been observed that the men's probability to consume organic products is 0,035 times less than the women's. When the age factor is considered, 1 unit increase in age increases the probability to consume organic products by 0,004 times. It has been determined that while the married individuals have a tendency to consume organic products 0,017 times more than the single individuals, in the job groups, the retired are 0,011 times less likely to consume when compared to civil servants. On the other hand, when the monthly revenue averages are examined, 1 unit increase in the revenue increases the probability to consume organic products by 0,013 times. One – unit change in the status of knowing the definition of organic product increases the consumption by 0,024 unit. While one – unit change in the status of knowing the product's certificate increases the consumption by 0,041 unit, one-unit increase in the information resources from which they learn about the organic products increases the probability to consume organic products by 0,009 unit. Besides, one-unit increase in the provinces where the consumers live increases the probability to consume organic products by 0,015 unit.

Another empirical finding that can be obtained from the research is the determination of the percentage change in the ratio of the probability (Pi/1-Pi) when there is a one-unit change in the variables.According to this, the change in the gender decreases the probability to consume organic products by 36,99%, whereas one-unit increase in age increases the probability by 5,12%. The change in the marital status increases the probability by 25,10% and the change in the occupation decreases the probability by 12,89%. On the other hand, the change in the educational status increases the ratio of the probability by 4,81%. While one-unit change in the monthly revenue increases the ratio of the probability by 19,12%, the change in the status of knowing the definition of organic product increases by 37,30%. Moreover, the change in the status of knowing that the organic products must have a certificate increases the ratio of probability by 71,26%. The change in the information resources about organic products increases the ratio of probability by 12,19% and the change in the provinces where the consumers live increases the ratio by 21,41%.

Conclusion
Along with the intense input production that started after 1950s, the production systems in agriculture sector have changed. Accordingly, the product markets have been reshaped and changes have been observed in marketing systems. While this process was going on, consumers were able to realize some of the problems caused by the existing system. Firstly, the problems in ecological balance have emerged, and then the problems related to the humans' health have come to the forefront. This situation has resulted with the need of reaching healthy food. Although the emerging cases, such as food security, ecological products and organic products in order to reach healthy food were not accepted in the beginning, today, they are among the issues, which are meticulously considered throughout the world. In this research, the attitudes and behaviours of the consumers toward organic products in Turkey and the factors that effect their consumption of organic products have been examined. The main research material for this study is the surveys that have been
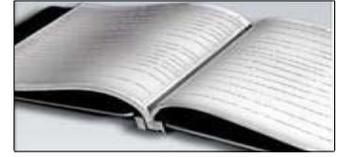
conducted in the biggest provinces of the 7 geographical regions throughout Turkey. The data, obtained from the surveys, has been transformed into frequency tables and interpreted. Then, statistical analysis has been done and quantitave findings are obtained through logistic regression analysis. According to this, statistically significant variables on organic product consumption have been determined as gender, marital status, occupation, monthly income of consumers, whether they know the definition of organic product or not, whether they know the necessity of a certificate for the organic products or not, their information resources on organic products, and the province they live in. As the results of the statistical analyses, apart from the socio-economical factors of the consumers, both the status of knowing the definition of organic product and the status of knowing the necessity of a certificate for the organic products have been determined as significant factors. Conveying this information to the consumers properly and effectively is thought to be important. Besides, the information resources must be considered well in this respect. Additionally, the provinces that the consumers live (geographical differences) have a direct effect on their organic product consumption. Some efforts, such as using media to provide information to all the consumers by considering the geographical differences, getting the consumers adopt the habit of buying organic foods by forming organic product departments in local bazaars and food markets, creating consumer awareness through visual and printed media and making price correction in order to have groups with different incomes reach the products can be considered as efficient methods to popularise the organic products.

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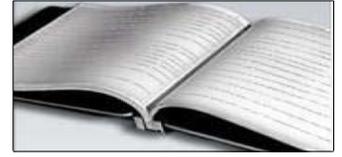
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