

A research on the characteristics and activities of producers in organic markets: a case study of Izmit and Sişli district

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Abstract

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Expanding the organic farming areas in Turkey is one of the goals of the Turkish Ministry of Food, Agriculture and Livestock. For the increase and sustainability of production, there must be an increase in the demand for organic food. One of the important marketing fields where growers and consumers meet is farmers' markets established periodically every week. This study analyzes the general characteristics of sellers in İstanbul/Şişli and Kocaeli/İzmit, products they grow organically as well as their production amounts, places where they procure inputs, fertilizer types they use, difficulties they experience in production, reasons why consumers prefer organic products, and sellers' suggestions for increasing the demand for organic farmers' markets. The organic fertilizer they used most was barnyard manure. For the purpose of identifying the difficulties they experienced in production based on whether or not the products sold by the sellers were grown by themselves, a chi-square analysis was made and the difference between variables was found to be significant ($p = 0.001 < 0.05$). The most significant reason why consumers preferred organic farmers' markets was "healthy product" and "promotion" was in the first place for increasing the demand for organic farmers' markets.

Keywords: input; organic; farmers' markets; organic products; transition period; organic production

Introduction

Natural resources are conserved because the inputs used in organic production are limited in accordance with the regulations. Encouraging the use of organic farming techniques will allow preventing the pollution from agricultural activities, increasing soil fertility and protecting natural ecosystems, coasts, bays, water basins, lakes and lagoons, and wetlands (Watson et al., 2002; Turhan, 2005; İlbaş, 2009; Anaç & Çiçekli, 2012; Singh & Maharjan, 2015). According to the 2016 data, organic farming areas in Turkey comprise 2% of the total agricultural areas (Anonymous, 2017). This rate is expected to be 8% in 2020 (İlbaş, 2009). Organic farmers' markets, which are established periodically every week, are among the key factors contributing to the expansion of or-

ganic production areas and encouraging local growers to engage in organic farming. Organic farmers' markets will not only promote organic production but also enable consumers to become more aware of organic foods. There are 18 organic farmers' markets established periodically every week in Turkey, according to the 2016 data.

This study aims to investigate the general characteristics, production activities and market satisfaction of the growers who have a stall in the first organic farmers' market of Turkey established in Şişli district of İstanbul province in 2006 and the last organic farmers' market of Turkey established in Izmit district of Kocaeli province in 2016. The purpose is to identify the general characteristics of growers in organic farmers' market and the problems they encounter in organic production and to offer solutions.

Materials and Methods

Organic growers in the organic farmers' markets of Şişli district of Istanbul province and Izmit district of Kocaeli province were interviewed, and a questionnaire form was prepared so as to identify their organic production amounts and product range and the inputs used and problems faced by them in production. The organic farmers' market in Izmit district of Kocaeli province was opened with the support of local government, Buğday Association, and Kocaeli Ecological Living Association.

The research area was determined to be all sellers of organic agricultural products in the organic farmers' markets established every Saturday in Şişli district of Istanbul province and Izmit district of Kocaeli province. The sellers who come from Istanbul have a stall in the organic farmers' market established in Kocaeli province. The main material of the research is the data obtained from the single organic market established in Izmit district of Kocaeli and the biggest organic market established in Şişli district of Istanbul from marketers by survey method. The questionnaire form, which included 24 closed ended and 6 open ended questions (30 questions in total) prepared in line with the purpose of the research, was conducted individually on 30 sellers who agreed to interview. Through the questionnaire, as part of the sellers' socio-economic profile, information about their demographic structure, level of education, social security status, level of satisfaction, organic production amount, product range, and inputs used and problems encountered in production as well as some relational data were obtained. The data obtained by means of the questionnaire were encoded and interpreted on SPSS 22.0. In the analysis of data, frequency distributions, chi-square test, and analysis of variance were employed.

Results and Discussion

40% of the sellers were between the ages of 38 and 48, 80% were male, 20% were female, 83.3% were married, and 16.7% were single. In terms of their level of education, 40% were high school graduates and 36.7% were university graduates. General demographic characteristics of the sellers are given in Table 1. In her study, Pezikoğlu (2010) reported that both farmers and companies had inadequate training, knowledge and awareness related to organic farming. 46.7% of the sellers were on regular salary, while 53.3% of them were not. 66.7% of the male sellers and 10% of the female sellers had social security. The percentage of the sellers having a second job is given in Fig. 1.

Table 1. General demographic characteristics of the sellers

Age		%	
	27-37	33.3	
	38-48	40.0	
	49-59	20.0	
	60 and older	6.7	
	Total	100.0	
Sex		%	
	Male	80.0	
	Female	20.0	
	Total	100.0	
Level of education		%	
	Illiterate	-	
	Literate	-	
	Primary school	20.0	
	Secondary school	3.3	
	High school	40.0	
	University	36.7	
	Total	100.0	
Marital status		%	
	Married	16.7	
	Single	83.3	
	Total	100.0	
Being on regular salary		%	
	Yes	46.7	
	No	53.3	
	Total	100.0	
Having social security		Yes (%)	No (%)
	Male	66.7	13.3
	Female	10.0	10.0
	Total	76.7	23.3

Recommending organic farming by level of education are given in Table 2 and relationship between growing own products and income earned are given in Table 3. 37% of the sellers had a second job, while 63% engaged only in selling in organic farmers' markets. The sellers were asked whether they recommended organic farming or not. Compared to primary school, secondary school and high school graduates, university graduates recommended organic farming more.



Fig. 1. Having a second job

Table 2. Recommending organic farming by level of education

Recommending	Level of education			
	Primary school	Secondary school	High school	University
	%	%	%	%
Yes	16.7	–	13.3	26.7
No	3.3	3.3	26.7	10.0
Total	20.0	3.3	40.0	36.7

As a result of the normal distribution test intended to demonstrate the relationship between the average weekly income earned by the sellers and whether or not the products sold by the sellers were grown by themselves, the variables were found to have a normal distribution. In the analysis of variance, the difference between the weekly income earned by the sellers and whether or not the products sold by the sellers were grown by themselves was found to be significant ($p = 0.033 < 0.05$). It was found that those sellers who grew their own products had a higher average weekly income. In the study they conducted in USA, Dimitri and Oberholtzer (2008) reported that the sellers who did not grow their own products could not find sufficient number of products for the growing organic food market. Products grown by sellers, production areas and annual production amounts are given in Table 4 and places where the sellers learned how to do organic farming are given in Table 5.

In the calculation of the places where the sellers learned how to do organic farming, only those sellers who grew their own products were taken into account. For this reason, the calculation was made based on 15 sellers. The sellers who learned how to do organic farming from “family elders” constituted the majority (60%). Places where the sellers procured inputs for organic farming are given in Table 6.

In the calculation of the places where the sellers procured inputs for organic farming, only those sellers who grew their own products were taken into account. For this reason, the calculation was made based on 15 sellers. As is seen, 93.4% of the sellers procured the inputs they used in production “in-house” and from “companies”. It is reported that the use of low-cost and less inputs in organic farming systems and the utilization of ecosystem services that enable the usability of regional resources lower production costs (Sandhu et al., 2008; 2010).

Table 3. Relationship between growing own products and income earned

Recommending	Growing own products						F value	Significance
	Yes			No				
	N ₁	X	S _d	N ₂	X	S _d		
Income earned	17	2185.2 9	4280.178	13	1093.08	1362.671	2.695	0.033

*Significant if $p < 0.05$

Table 4. Products grown by sellers, production areas and annual production amounts

Products grown	Average production area (da)	Average production amount (tons)
Spinach	1	0.65
Apple	300	200
Orange	90	200
Parsley	1	0.15
Mandarin	1	3
Celery	3	10
Strawberry	2	1.5
Tomato	61	155
Rice	110	60
Alfalfa	100	10
Carrot	2	80
Broccoli	4	5
Wheat	100	50
Potato	52	18
Onion	2	18
Chickpea	50	25
Corn	400	400
Lettuce	1	0.25

Table 5. Places where the sellers learned how to do organic farming

Places where the sellers learned how to do organic farming	%
Family elders	60.0
Friend	6.7
Provincial directorate of agriculture	13.3
Training	13.3
Other	6.7
Total	100.0

Table 6. Places where the sellers procured inputs for organic farming

Places where the sellers procured inputs	%
In-House	46.7
Companies	46.7
Other	6.6
Total	100.0

Table 7. Relationship between growing own products and difficulties encountered in production

Growing own products	Difficulties encountered production						Chi-square test result		
	Input procurement	Transition process	Cost	Poor promotion	Other	None	K ²	d _f	p
	%	%	%	%	%	%			
Yes	80.0	85.7	66.7	100.0	100.0	-	20.705	5	0.001
No	20.0	14.3	33.3	-	-	100.0			
Total	100.0	100.0	100.0	100.0	100.0	100.0			

Relationship between growing own products and difficulties encountered in production are given in Table 7.

A chi-square analysis was made to identify the difficulties encountered based on whether or not the products sold by the sellers were grown by themselves, and the difference between variables was found to be significant ($p = 0.001 < 0.05$). Those sellers who grew their own products stated that they had the most difficulty in the transition period. For the plant products used in organic farming, there must be a transition period of at least two years following planting in annual plants and three years prior to organic product harvest in perennial plants. The latest date when the input prohibited by the regulation is used in the relevant production area is taken as a basis for plant production in the transition period. Control and certification body or control body can extend or shorten the transition period upon performing necessary examinations. Transition period cannot be shorter than 12 months in annual plants and 24 months in perennial plants (Anonymous, 2010). In the studies they conducted, researchers ascertained that growers experienced yield loss due to lack of nutrients and fighting against diseases throughout the transition period (Scow et al., 1994; Gopinath et al., 2008). However, in spite of such problems, a transition period is required so that growers can get used to the new agriculture system and gain experience in performing plant nutrition and fighting against diseases and pests in accordance with the regulation, and the soil structure can get better within this time period. Sellers' fertilizer usage levels are given in Table 8. Plant and butterfly species were found to have enriched during the

transition from conventional to organic farming and throughout organic farming (Jonason et al., 2011).

In the calculation of the level of fertilizers used by the sellers, only those sellers who grew their own products were taken into account. With the usage levels of "high" and "very high" and 14 sellers, barnyard manure was the most frequently used fertilizer type. It was followed by "compost". In Turkey, organic farming is done pursuant to the provisions of the Organic Farming Law and of the Regulation on the Principles and Implementation of Organic Farming dated 2004 and numbered 25659. This regulation prohibits the use of fertilizers coming from extensive production as barnyard manure. It is permitted to use animal manure coming from organic production or organic materials or preferably both as compost (Anonymous, 2010). Relationship between sellers' sex and problems encountered in selling products are given in Table 9.

A chi-square analysis was conducted to determine the problems faced by the sellers in selling their products by sex, and the difference between variables was found to be insignificant ($p = 0.466 > 0.05$).

The biggest problem encountered by both male and female sellers in selling products was determined to be "low demand". Oberholtzer et al. (2005) reported that if supply exceeded demand, prices would decrease and more consumers could have access to organic food. The sellers had included other problems as "product procurement" and "high prices", respectively. In their study, Wier and Calverley (2002) reported that high organic product prices consider-

Table 8. Sellers' fertilizer usage levels

Fertilizer Types	Fertilizer usage levels				
	None	Very low	Low	High	Very high
	%	%	%	%	%
Barnyard	-	-	6.6	46.7	46.7
Manure compost	46.7	-	13.3	13.3	26.7
Green manure	60.0	-	13.3	20.1	6.6
Vermicompost	60.0	6.6	20.1	13.3	-
Leonardite	80.1	-	6.6	13.3	-
trade certified fertilizer	53.2	20.1	6.6	20.1	-
Other	93.4	-	-	6.6	-

Table 9. Relationship between sellers' sex and problems encountered in selling products

Sex	Difficulties encountered production					Chi-square test result		
	Low demand	Product procurement	High prices	Other	Total	K ²	d _r	p
	%	%	%	%	%			
Male	76.5	83.3	100.0	50.0	80.0	2.549	3	0.466
Female	23.5	16.7	–	50.0	20.0			
Total	100.0	100.0	100.0	100.0	100.0			

Table 10. Distribution of the reasons why consumers prefer organic farmers' markets by level of significance

Reason of Preference	Significance level				
	Insignificant	Barely significant	Slightly significant	Significant	High significant
	%	%	%	%	%
Healthy products	–	–	6.7	13.3	80.0
Environmental	–	3.3	13.3	66.7	16.7
Influence parents'	–	–	6.7	30.0	63.3
Sensitivity being delicious	–	3.3	16.7	46.7	33.3
Other	–	–	–	100.0	–

ably limited the purchase by consumers. Distribution of the reasons why consumers prefer organic farmers' markets by level of significance are given in Table 10.

In terms of the distribution of the reasons why consumers prefer organic farmers' markets by level of significance, "healthy products" came first with a significance level of 80%. It was followed by "parents' sensitivity" (63.3%) and "being delicious" (33.3%). In Great Britain and Denmark, freshness, taste and health were found to be the reasons why consumers preferred organic farmers' markets. Environmental properties are of less priority (Wier et al., 2008). Singh and Maharjan (2015) reported that consumers' demand for organic products gradually increased and provided a great advantage for growers. Distribution of the sellers' suggestions for increasing the demand for organic farmers' markets is given in Fig. 2.

Suggested by 25 sellers, "promotion" was in the first place in the distribution of the sellers' suggestions for increasing the demand for organic farmers' markets. It was followed by "raising the awareness of consumers" and "training the growers", respectively. Researchers reported that it was necessary to raise the awareness of production workers about their key role in conserving soil and water sources and protecting their own as well as others' health and to work on advertising and promotion activities, the most effective tool for promotion was television, and the use of flyers in promotion would also be effective (Kozlan et al., 2010; Marangoz & Çelikkan, 2010; Pezikoğlu, 2012). Sellers' opinion about the location of organic farmers' markets in İzmit and Şişli are given in Table 11.

73.3% of the sellers believed that the location of the organic farmers' market was right, while 26.7% of them

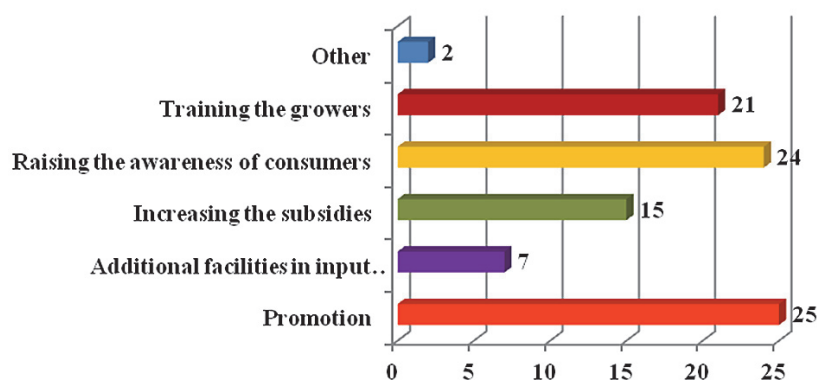
**Fig. 2. Distribution of the sellers' suggestions for increasing the demand for organic farmers' markets**

Table 11. Sellers' opinion about the location of organic farmers' markets in İzmit and Şişli

The location of the organic farmers' market is right	Level of education		
	Kocaeli/İzmit	İstanbul /Şişli	Total
	organic farmers' market	organic farmers' market	
	%	%	%
Yes	62.5	77.3	73.3
No	37.5	22.7	26.7
Total	100.0	100.0	100.0

stated it was not. Furthermore, the sellers were asked about the problems encountered in organic farming production, and they gave the following answers: "The land does not yield as planned", "Choosing the right soil is important; for example, yield is not always the same in grains", "Input prices are high; just like pesticides and fertilizers, it is difficult to find organic vegetable seed varieties and animal manure", "The number of varieties is inadequate and they are very expensive", "There is no one to solve the problems we face in fighting against diseases and pests; we are trying to solve them through our own means", "The number of trained and experienced workers is very low", "Transportation and costs are a problem for the products coming from other cities", "Product purchase prices are high for those who do not grow their own products", "Products in organic farmers' markets are less diversified than those in conventional farmers' markets and consequently consumers may not prefer organic farmers' markets", "For diversity, the number of points of production and sale needs to increase", "Advertising and promotion activities are insufficient", "Bureaucratic procedures must be simplified and government support must be increased". In their studies, Kızılaslan and Olgun (2012), İpek and Çil (2010), and Thiers (2005) reported that government support was required for encouraging growers to do organic production. "Product durability is low and products get spoiled quickly", "Products' outer package safety (durability) must be increased", "Excessive inspections may disquiet growers and sellers".

Conclusions

Below are the results of the questionnaire conducted and of one-to-one interviews made with sellers in the first and last organic farmers' markets of Turkey:

- 40% of the sellers were between the ages of 38 and 48, 80% were male, 40% were high school graduates, and 36.7% were university graduates. Compared to primary school, secondary school and high school graduates, university graduates recommended organic farming more.

Organic farming needs to be adopted not only as plant production but also as a philosophy of life (natural resources, environmental consciousness, food safety, both human and animal rights and plant diversity), and the level of education is an indicator of this.

- Those sellers who did not grow their own products stated that product purchase prices were high. The statistical analysis performed demonstrated that those sellers who grew their own products had higher average weekly income. In organic farming, farming must be promoted more than brokerage. As is seen, 93.4% of the sellers procured the inputs they used in production "in-house" and from "companies". Barnyard manure was the most frequently used fertilizer type – 46.7%.

- The sellers reported that products in organic farmers' markets were less diversified than those in conventional farmers' markets; it was difficult to find organic vegetable seeds and varieties and consequently consumers turned towards conventional farmers' markets. Necessary studies must be conducted by the Ministry and universities in order to increase the number of organic vegetable seed varieties, and input procurement, pesticides, fertilizers and seeds must be at affordable prices. Establishing organic farmers' markets close to each other will expand the range of products in the market. Suggested by sellers, "promotion" was in the first place in the distribution of the sellers' suggestions for increasing the demand for organic farmers' markets. It was followed by "raising the awareness of consumers" and "training the growers", respectively.

- The sellers mentioned high input prices, and 46.7% of them indicated they procured inputs from companies. Growers must be informed specifically about passive plant protection measures. They must be told that pesticides are applied as a measure of the last resort. In organic farming, sustainability requires closed-system production and self-sufficiency in the establishment. Growers must definitely create compost piles in the establishment and, if possible, engage in stockbreeding. If they are unable to reach a sufficient amount, they must conduct a good production planning and decide the source of fertilizer supply at the beginning. This problem may be solved by employing the personnel who is trained in and knows organic production.

- The growers reported they had difficulties in the transition period. Reducing the certification fees paid by growers and increasing the government's support during the transition period will make it easier to begin organic production.

- The growers stated that low consumer demand and high organic product prices led to a decrease in the quan-

tity of sales. In order to overcome low demand, promotional activities must be conducted and consumers must be informed about reliable food and environmental consciousness.

As a conclusion, 80% of the consumers who come to organic farmers' markets prefer organic products because such products are healthy. In order for healthy product consumption to influence the majority of population, the number of organic farmers' markets must increase and price equilibrium must be ensured.

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