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Market Assessment and Development for Organically Grown Produce in Armenia

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Abstract

Until recently it could have been said that organic farming was an intermittent technique limited to only a few countries. However, in the last few years a boom was emerged which has led to a drastically different situation when this technique is widely used in almost all the countries and is currently flourishing. Armenia is not exclusion in this regard. Armenia has the potential for developing high value organic production of a variety products like: fresh and processed fruits and vegetables, honey and aquaculture products, medicinal and culinary herbs. Appropriate altitude from sea level and the climate create favorable conditions for Armenia to grow a variety of organic fruits and vegetables. In particular, Armenia is rich with apples, apricots, pears, plums, pomegranates, cherries and strawberries. As for vegetables, the following products are expected to be competitive also in foreign markets when produced using organic methods: onion, radish, garlic, cabbage, spinach, asparagus, tomato, eggplant, bean, pepper, carrot, watermelon and many others.

The study determines the level of knowledge about organic products in Armenia, analyzes the potential consumers' attitudes towards organic foods and reveal the critical aspects that distinguish organic products. The study focuses on the potential Armenian consumer of organic produce. The study will empirically evaluate which demographic characteristics cause consumers to be more willing-to-pay for organically grown produce in Armenia. The likelihood of paying a premium for organic produce will also be evaluated.

Keywords: organic produce, market assessment, willingness-to-pay, certification.

Introduction

Until recently it could have been said that organic farming was an intermittent technique limited to only a few countries. However, in the last few years a boom was emerged which has led to a drastically different situation when this technique is widely used in almost all the countries and is currently flourishing. Armenia is not an exclusion.

Armenia has the potential for developing high value organic production of a variety products like: fresh and processed fruits and vegetables, honey and aquaculture products, medicinal and culinary herbs (AOAF and DAI-ASME, 2005). Appropriate altitude from sea level and the climate create favorable conditions for Armenia to grow a variety of organic fruits and vegetables. In particular, Armenia is rich with apples, apricots, pears, plums, pomegranates, cherries and strawberries. As for vegetables, the following products are expected to be competitive in foreign markets when produced using organic methods: onion, radish, garlic, cabbage, spinach, asparagus, tomato, eggplant, bean, pepper, carrot, watermelon and many others (AOAF and DAI-ASME, 2005).

There are several factors which encourage organic movement in Armenia. First, Armenian farmers have been using very low quantities of different chemical inputs, fertilizers, and plant protection means during the last decade. According to the Ministry of Agriculture (2004) the volume of N- fertilizer consumed in Armenia went down from 25,000 tons in 1992 to as low as 5,000 in 2001. In the last decade, the use of mineral fertilizers was reduced by 10 times, and plant protection means – by 10 times. Second, in comparison to conventional, organic production is quite labor-intensive and can result in greater to diseases and insects. In Armenia, cheaper labor is widely available than in many other countries and they use very simple product

processing techniques. Another positive factor is that currently there are many local and international organizations stimulating the organic farming in Armenia. Organizations like SHEN NGO, ECOGLOBE, USDA, DAI-ASME, GTZ, FAO, and the Ministry of Agriculture are studying the potential of organic agriculture in Armenia.

SHEN NGO was one of the pioneers of organic movement in Armenia. Established in 1988, SHEN is considered to be one of the oldest NGOs in Armenia. The first steps were started in 2002 in the scope of a regional project. Financial assistance was provided by the Swiss Development Corporation and EPER (Switzerland). These steps included studying international experience and adopting organic production standards and develop a basement for establishing a certification body. Finally, “ECOGLOBE” organic certification body was established in 2002, which now offers organic Control and Certification services to its clients based on international requirements. Thus, SHEN is aspiring to build and develop the organic produce sector in Armenia for the sake of both small farmers and consumers. It’s worth mentioning the SHEN NGO’s ongoing activities towards the development of organic farming in Armenia. Approximately 100 ha of organic fruit orchards have been established on the community reserve lands in Armavir and Aragatsotn marzes (provinces). They produce apricots and peaches for drying in solar dryers. A brand new peach orchard of 25 ha was established in Ayrum, which will become productive in the nearest future. Later, a pilot project was initiated by SHEN in 2003 aiming at stimulating fruit and vegetable farmers to adopt organic production standards. Around 25 farmers from Tavush, Vardenis, Sisian and Armavir started practicing organic methods on their plots. More than 1 ton of organically grown produce was received. Professional staff of SHEN is spreading out the knowledge and awareness about the organic farming and explaining to farmers the importance of inspection, control and certification, which are very important for further development. SHEN currently sells to around 30 consumers the majority being foreigners. Customers are notified by e-mail what is available for delivery. Deliveries are done to home or offices as requested by the consumers.

The main objectives of this study are to conduct market assessment for organically grown produce in Yerevan and define strategies for future development of the sector. To achieve these initial objectives, the study has been broken down into several secondary objectives:

- Determine the level of knowledge about organic products in Armenia.
- Analyze potential consumers’ attitudes towards organic foods.
- Reveal the critical aspects that distinguish organic products.
- Determine the shopping habits of potential customers.
- Determine the criteria which support or discourage the consumption of organic products.

Literature Review

Enormous amount of studies and research were conducted by many authors in the field of organic agriculture. There are organic demand studies, consumer behavioral studies, studies to predict willingness-to-pay (WTP) a premium for organically grown produce and many other studies available in the literature. Although some organic demand studies have been carried out in the past, the market for organic produce has quickly flourished in recent years. Increasing awareness of organic farming calls for new research to reveal the current dynamics of organic market.

According to several studies, the *image of organic products* is generally positive due to their perceived health value, product safety and natural purity (Beharrel and Macfie, 1991, Spiller and Luth, 2004, etc). In most studies gender and income are among the most significant determinants affecting the willingness-to-pay for organically grown produce. These studies found that willingness-to-pay for food risk reduction increases with income (Elnagheeb and Jordan, 1990) and Underhill and Figueroa (1996), cited by Govindasamy (1999), both reported that higher-earning individuals were the most likely to pay a premium for a certified organic produce. Weaver and et al. (1992) reported that 56 percent of consumers indicated a willingness-to-pay of at least a 10 percent premium to obtain organic tomatoes. Only 19 percent of their sample indicated that they were unwilling to pay any premium at all. Huang (1993) reported a gender significance, which showed that females are more likely than males to pay a premium for organic produce. Misra et al. (1991) reported a negative correlation between education and willingness-to-pay for organic produce. Many authors (Zellner, Degner 1989) also showed results that higher-educated consumers exhibit a lower willingness-to-pay for safer food.

Conflicting results regarding the marginal age effect also have been documented. Although Buzby, Ready and Skees (1995) showed age to be inversely correlated with willingness-to-pay for organic produce, Zellner and Degner (1989) reported findings where older consumers are more likely to pay higher prices for higher level of food safety. Thompson (1998) suggests that demand is positively related to household size, and has mixed relationship to age (young and older middle-aged adults tend to buy the most organic produce). Education has an interesting effect in that it is positively related to demand unless post-graduate education is pursued in which case the opposite holds (Ward et al. 2004). Thompson suggests that income may not be related to organic purchases, while noting that many studies generally suggest a positive relationship between income and organic consumption.

Thompson and Kidwell along with Loureiro, McCluskey and Mittelhammer (1999, 2000) cited by Ward, Hunnicutt and Keith (2004) found that the presence of children under 18 increased purchases of organic produce. In their study Thompson et al. argued that the ages of children would be important and pointed to the size of the organic baby food market.

The inconsistencies of past and present studies may be the result of changes within the growing market for organically grown produce. New data and research studies are warranted to provide a clearer picture of the present structure of the organic market.

The present study focuses on the potential Armenian consumer of organic produce. The study will empirically evaluate which demographic characteristics cause consumers to be more willing-to-pay for organically grown produce in Armenia. The likelihood of paying a premium for organic produce will also be evaluated.

Data and Methodology

Data

Experience in other countries and past conducted research studies tell that initial target population is urban and upper income. The target market in Armenia is dominated by Yerevan because of the concentration of people who have the aforementioned characteristics. In addition to high income Armenians, they include the international community associated with foreign governments, organizations and businesses (Parks 2005). Taking the aforementioned facts into consideration a total of 107 surveys have been conducted. The sampling plan was developed

according to Cost-Basis Approach, using the Purposive Sampling (Lincoln and Cuba, 1985), aiming at selecting sectors and people from whom the most could be learnt. The respondents were employees of international organizations, foundations, international programs and projects who are considered high income and high-educated people. Most of them have earned degrees in Western Universities and have on average high paid jobs. These people were contacted randomly.

The representatives of the following organizations took part in the survey: Ameria Consulting, Armenia 2020, H2Economy, Agribusiness Teaching Center, Credit Guarantee Fund, USAID Primary Health Reform Program (EMG), and USAID Alliance to Save Energy, Center for Agribusiness and Rural Development (USDA FAS), Eurasia Foundation, Cascade Holding, World Bank Yerevan office, International Center for Agribusiness Research and Education, KPMG, and Armenian Forests NGO.

Methodology

As the objectives of this study had been defined, the corresponding questionnaires were designed on a series of one answer questions and other multi-answer questions classified into several blocks to find out the socio-demographic characteristics, level of knowledge, shopping habits and attitude towards organic produce. A questionnaire was designed for potential customers containing questions on consumer behaviors, attitudes, perception about organically grown produce, mainly fruits and vegetables, questions measuring the familiarity and understanding the concept of “Organic Produce.” The questionnaire was then codified to transform the responses into numeric variables. The data file was analyzed using SPSS (11.5 professional) program using frequencies, cross tabulations and Likert-type scale analysis. Finally, a correlation analysis was carried out to determine the degree and the direction of the association found between some of the variables.

Results and Discussion

The major findings of the study are presented in this section. First, results from the potential consumer sample are presented. The sample was stratified according to age and sex variables. The resulting distribution can be seen in the following table.

Table 1: Distribution of the sample according to age and sex variables

Gender	Age of the respondent				Total
	< 25 years old	26-35 years old	35-49 years old	>50 years old	
Female	15	12	17	6	50
Male	9	14	27	7	57
Total	24	26	44	13	107

Source: Drawn up by the author.

Results show that a slight predominance of men (53.3%) in comparison to women (46.7%) is observed with special emphasis on the age group between 35-49 years old (41%).

Table 2: Socio-economic characteristics of the sample surveyed.

Profession	Frequency	Percent
wage earner	84	78,5
student	10	9,3
housewife	9	8,4
civil servant	2	1,9
pensioner	2	1,9
Total	107	100,0

Education	Frequency	Percent
secondary	4	3,7
technical college	4	3,7
non complete higher	14	13,6
higher education	61	56,8
PhD/MS	24	22,2
Total	107	100,0

Average family monthly income	Frequency	Percent
< 50,000	3	2,8
51,000-100,000	14	13,1
101,000-200,000	37	34,6
> 201,000 AMD	53	49,5
Total	107	100,0

Number of family members	Frequency	Percent
1	1	1,2
2-3	38	35,8
4 -5	56	51,9
> 5	12	11,1
Total	107	100,0

Source: Drawn up by the author.

Regarding the profession, around 79% of the respondents are wage earners, meaning that they are employees of the already mentioned organizations. More than 56% of the people surveyed have university degrees, and 22% hold PhD or MS degrees (cumulative percentage of higher education 79%). As for the income level, around 49% of people surveyed belong to a social class with a relatively high income (35% with a monthly family income of 101,000 – 200,000 AMD).

Taking into consideration the NSS data, in general, average monthly household income is slightly over 25,000 AMD in Armenia. The average family size of the households is 4.2. Around 63% of the respondents have large families. Approximately 36% of households surveyed have 2-3 members (See Table 2). About 54.2% of the people surveyed didn't have children less than 17 years old in the family. Approximately 32% had only one and 12% - two children under 17 years old (See Table 3).

Table 3: Number of children (under 17 years old) in the family.

	Frequency	Percent
None	58	54,2
One	34	31,8
Two	13	12,1
Three and more	2	1,9
Total	107	100,0

Source: Drawn up by the author.

Issues related to Shopping Habits

Most of the respondents (45.7%) usually buy fruits and vegetables from “farmer market”, which is considered to be a wholesale market for fresh produce. About 23.5% buy from street markets and 16% from retail outlets. Only 11% of the people surveyed buy fruits and vegetables from supermarkets (See Table 4).

Table 4: Where do you buy fruits and vegetables from?

	Frequency	Percent
Farmers market	49	45,7
Specialized shop	4	3,7
Supermarket	12	11,1
Street market	25	23,5
Retail outlet	17	16,0
Total	107	100,0

Source: Drawn up by the author.

The respondents were asked to rate the importance of the factors affecting the fruit and vegetable consumption. A Likert-type scale from 1 to 5 was used, (1 being not very important and 5 - very important). The following table indicates that consumers give much importance to these factors: freshness, taste and useful features. This is a definitely positive result. Visibility in the shop and packaging are not so important factors affecting the consumption (See Table 5).

Table 5: Factors affecting the consumption based on importance

Affecting Factors based on importance	Mean	St. Dev.
Price	3,479	1,302
Taste	4,230	0,979
Freshness	4,743	0,710
Useful features	4,102	1,064
Presented in the shop	2,897	1,254
Visibility in the shop	2,792	1,162
Packaging	2,756	1,270

Source: Drawn up by the author.

Around 78% of the people surveyed do not change their preferred location of purchase. This reveals that more or less these consumers are loyal. For those who change their preferred location of purchase (22%) the reasons are the low quality of available produce and frequent price changes. About 70% of the respondents spend more than 8000AMD on fruits on monthly basis (\$18), however only 52% spend 8000AMD and more on vegetables. Approximately 30% of the people surveyed spend between 5000-8000AMD monthly on vegetables (\$11 - \$18).

The respondents were asked about the decision making person in the family regarding the fruit and vegetable purchase. Around 73% of the people surveyed indicated that their mothers are who usually decide what fruits and vegetables to buy. Approximately 54% mentioned that actual purchase was done by their mothers and 30%- by fathers. Almost 59% of the respondents mentioned that advertisement has an influence on purchasing decision. To the question “how do you get information about food”, 38% of the respondents said “through word of mouth”, and 31% mentioned through advertisement (See Table 7).

Table 7: How do you get information about food?

	Frequency	Percent
Advertisement	33	30,9
Word of mouth	41	38,3
Are visible in the shops	30	28,4
Other source	3	2,5
Total	107	100,0

Source: Drawn up by the author.

Knowledge of Organic Produce

With regard to the concept the respondents surveyed have about organic produce, table 8 indicates, that there is a predominant trend to identify these foods as chemical free products.

Table 8: Concept of organic produce for people surveyed.

Organic foods are:	Count	Percent
Natural foods	12	11,2
Produced without chemical fertilizers	41	38,3
Ecologically clean foods	8	7,5
Healthier foods	17	16
Produced using organic methods	13	12,1
Other explanations	4	3,7
Don't know	12	11,2
Total responses	107	100

Source: Drawn up by the author.

Around 11% identify these products as more natural and 16% as healthier food. Almost 11% of the people surveyed didn't know the meaning of organic produce. It's worth mentioning some of the other explanations. One respondent told that he considers only his grandfather's products to be organic, very traditional methodology. Another one identified organic as being produce grown by methods used 1000 years ago.

Table 9 shows what opinions about the advantages of organic produce are in the sample. Around 33% think that healthiness is the main advantage of organic produce. Another 32% indicated safety as an important advantage. As table 8 showed earlier, about 11% of the people surveyed didn't know any advantage of organic food.

Table 9: Advantages of organic produce.

Advantage	Count	Percent
It's tasty	11	9,9
It's healthy	36	33,3
It's safe	34	32,1
It's nutritional	12	11,1
Better smell	2	2,5
Don't know	12	11,1
Total responses	107	100

Source: Drawn up by the author.

The respondents were asked whether or not they are aware of any organization stimulating the organic agriculture in Armenia. Table 10 shows the summary of the responses.

The vast majority of the people surveyed (65.4%) didn't know any organization actively involved in the Armenian organic movement. Around 16.8% of the respondents knew about the activities of SHEN NGO. Fruitful Armenia or sometimes mentioned as Argentinean investment by 11% of the respondents was in the second place. The third (10.3%) is the Green Lane, recently established NGO, which was also known by 11 people in the sample.

Table 10: Awareness of organic agriculture development projects in Armenia.

Organizations	Count	% of responses	% of cases
SHEN	18	14,63	16,8
Fruitful Armenia	12	9,76	11,2
Green Lane	11	8,94	10,3
ECOGLOBE	7	5,69	6,5
Tamara Fruit	3	2,44	2,8
AOAF	2	1,63	1,9
Don't know	70	56,91	65,4
Total responses	123	100	114,9

Source: Drawn up by the author.

The respondents were asked whether or not they know about the availability of organic produce in Armenia. Table 11 shows that around 55.5% didn't know about the availability of organic fruits and vegetables in Armenia. To the question "Have you ever tried organic produce?", 67% answered "No." (See Tables 11 and 12)

Table 11: Are you aware of availability of organic produce in Armenia?

	Frequency	Percent
NO	59	55,5
YES	48	44,5
Total	107	100,0

Source: Drawn up by the author.

Table 12: Have you ever tried organically grown products?

	Frequency	Percent
NO	71	66,7
YES	36	33,3
Total	107	100,0

Source: Drawn up by the author.

To the question "Why don't you buy organic produce?", 64.2% of the people surveyed answered that they *don't know where to buy*, another 25% told that the reason of not buying is the *lack of knowledge*. About 10.3% of the respondents indicated that there might be a possibility of fraud (See Table 13).

Table 13: The reasons of not using organic produce.

	Frequency	Percent
I don't know where to buy	69	64,5
Possibility of fraud	11	10,3
Lack of knowledge	26	24,3
High prices	1	0,9
Total	107	100,0

Source: Drawn up by the author.

The respondents were asked to evaluate different aspects related to organic products. To assess these attributes, a Likert-type scale has been used, assessing sentences from 1-5 according to

their meaning: 1 (totally disagree) to 5 (totally agree). As it was shown in Table 9, respondents are seen to be favorable towards organic produce, with the average score for organic produce being 3.56 out of 5.

The highly valued aspects were: the fact that they are more natural, relationship with health, high quality, the fact that they contain less toxic and dangerous waste. The vast majority of the people surveyed disagree that organic foods are a fraud or like a fashion. This is a positive result. The respondents also don't think that organic foods are worse than conventional ones (See Table 14).

Table 14: Respondents' attitudes towards organic produce

Attributes	Mean	St. Dev.
Organic foods are healthy	4,52	0,838
Organic foods are more natural	4,49	0,860
Organic foods are of higher quality	4,52	0,838
Organic foods are more environment-friendly	4,57	0,825
Organic foods are of better smell/flavor	3,88	0,944
Organic foods produce less toxic and dangerous waste	4,05	0,820
Organic foods are of higher level of guarantee and control	3,46	1,049
Organic foods are more expensive	4,00	0,870
Organic foods don't last long	3,24	0,898
Organic foods don't look as good	3,01	1,014
Organic foods are a fraud	2,22	1,304
Organic foods are like fashion	1,92	1,132
Organic foods are worse than conventional ones	1,65	0,867
Organic foods are more difficult to find	4,25	0,773

Source: Drawn up by the author. The structure was adopted from Robles et al. (2005).

The respondents were also asked how they would make sure that the produce is organic. Around 33.3% (of which 33% with higher education) told that they will find out that through difference in taste, which of course is not a right answer. A clearly positive response is “*Certified*”. About 32.1% of the people surveyed give importance to certification as a way to be assured that the product is organic. However, only 32% of these respondents are highly educated. So, education has no clear role selecting the assurance factors. Respondents who give importance to TRUST make only 8.6% of the sample (See Table 15). Only seven people out of 107 require “special packaging” to be assured that the produce is organic.

Table 15: Assurance factors that the produce is organic.

Attributes	Frequency	Percent
Difference in taste	36	33,3
Difference in appearance	8	7,4
Difference in price	5	4,9
I trust	9	8,6
Certified	35	32,1
Special packaging	7	6,2
Labeled duly	3	2,5
Other	4	3,7
Total	107	100,0

Source: Drawn up by the author.

To the question “where would you prefer to acquire organically grown fruits and vegetables from”, around 48% of the respondents surveyed answered “*from specialized shops*”. Approximately 25% and 23% of the people surveyed were willing to acquire organic produce from “*supermarkets*” and “*farmers market*” respectively (See Table 16). It was surprising to see that only one respondent preferred the organic produce to be delivered. This can be explained with the fact that they realize the price of that service to be expensive.

Table 16: Preferred method to acquire organic fruits and vegetables.

	Frequency	Percent
Delivered at home/office	1	1,2
Specialized shops	52	48,1
Supermarkets	26	24,7
Farmer markets	25	23,5
Other	3	2,5
Total	107	100,0

Source: Drawn up by the author.

Foreign studies also indicate that consumers, who use organic produce, generally buy this type of product in specialized stores (herbalist’s stores, stores selling dietary products) and superstores (Robles, Vannini, De la Puente, Fernandez-Revuelta, 2005).

About 69% of the respondents surveyed were willing to regularly be informed how to get organic produce (See Table 17). Out of 74 respondents, who were willing to get information regularly, 29 (40%) provided some contact information. This is a clearly positive result. They chiefly provided their personal e-mail addresses and some provided telephone numbers.

Table 17: Willingness to be informed about how to acquire organic produce.

	Frequency	Percent
NO	33	30,8
YES	74	69,2
Total	107	100,0

Source: Drawn up by the author.

The respondents were asked to identify their preferred media to get information about organic produce and organic agriculture in general. Table 18 shows that 38% of the respondents prefer to get info through special TV Programs, another 23% prefers TV advertisement. Newspaper is also an important information source for around 17% of the people surveyed.

Table 18: Preferred media to get information about organic produce.

	Frequency	Percent
Special TV programs	41	38,3
TV advertisement	25	23,4
Other advertisement	15	14,0
Radio	3	2,8
Newspapers	18	16,8
Word of mouth	5	4,7
Total	107	100,0

Source: Drawn up by the author.

The respondents were asked whether or not they are willing-to-pay a premium for organically grown produce. Table 19 shows surprising results. **Only 12% of the respondents were not willing to pay any premium.** The rest of the people were ready to pay some price premiums.

Around 45% of the people surveyed mentioned about their willingness to pay a price premium between 10 and 20 percent. Approximately 15% and 16% of the respondents showed readiness to pay 20-30% and 30-50% price premiums respectively. All in all, it can be said that about 60% of the sample is willing-to-pay a price premium between 10 and 30 percent (See Table 19).

Table 19: Willingness-to-Pay a price premium for organically grown produce.

	Frequency	Percent
NO	13	12,1
YES < 10%	11	10,3
YES 10-20%	48	44,9
YES 20-30%	16	15,0
YES 30-50%	17	15,9
YES 50-75%	1	0,9
YES 75-100%	1	0,9
Total	107	100,0

Source: Drawn up by the author.

The cross-tabulation results show that 84.2% of female respondents were willing to pay a price premium for organic produce, likewise, around 91% of the males surveyed showed willingness-to-pay a premium. About 52% of those male respondents, who were willing to pay a premium, indicated that the price premium will be between 10 and 20 percent. It's worth mentioning that around 49% from those female respondents who were ready to pay more, expressed willingness paying between 10-20 percent price premiums. However, the symmetric measure analysis showed that there is not so strong association between "Gender" and "willingness-to-pay a price premium" variables (contingency coefficient was 0.098). There were relatively active associations between "willingness-to-pay a price premium" and "Income", "Education", and "Number of children under 17 in the family" variables.

Table 20 showed that 46.4% and 47.5% of people surveyed belonging to the income groups "101,000-200,000 AMD" and "200,000 AMD and more" respectively, were ready to pay a premium of 10-20% (Correlation coefficient is 0.11, sig. 0.382).

It's interesting that in their study Govindasamy, Ramu and John Italia (1998) found gender variable to be significant and negative. Their results showed that males were 12% less likely to pay a price premium for organic produce. The willingness-to-pay a premium is greater for those who have high incomes. In their sample, those under 36 years of age were 50% more likely to pay a premium for organically grown produce than those over 65 were (Govindasamy et al.1998).

Table 20: Average Family Monthly Income * Willingness-to-pay a Premium.

	Cross tabulation (% within income group)						
	NO	< 10%	10-20%	20-30%	30-50%	50-75%	75-100%
< 50,000 AMD	50	50	0	0	0	0	0
51,000-100,000	18,2	0,0	36,4	18,2	27,3	0,0	0,0
101,000-200,000	7,1	17,9	46,4	14,3	10,7	3,6	0,0
> 201,000 AMD	12,5	5	47,5	15	17,5	0	2,5
Total	12,1	10,3	44,9	15,0	15,9	0,9	0,9

Source: Drawn up by the author.

Table 21 shows the situation in our sample. It indicated that 85% of those between the ages 25 and 35 have expressed a willingness to pay a premium of 10-30% for organic produce.

Table 21: Number of family members (FM) * Age of the respondent* Willingness-to-pay a Premium.

Number FM	Cross tabulation (% within the group)						
	NO	< 10%	10-20%	20-30%	30-50%	50-75%	75-100%
1	0	0	100*	0	0	0	0
2-3	10,3	6,9	41,4	13,8	24,1	0,0	3,4
4-5	14,3	11,9	50,0	14,3	7,1	2,4	0,0
>5	11,1	11,1	22,2	22,2	33,3	0,0	0,0

AGE	NO	< 10%	10-20%	20-30%	30-50%	50-75%	75-100%
< 25	16,7	22,2	38,9	5,6	16,7	0,0	0,0
25-35	5,0	5,0	65,0	20,0	5,0	0,0	0,0
35-50	12,1	6,1	36,4	15,2	24,2	3,0	3,0
> 50	20,0	10,0	40,0	20,0	10,0	0,0	0,0

Source: Drawn up by the author.

*there was only one person, who lived alone, and was willing to pay a premium,

Findings showed that almost 90% of those with non-complete higher and higher education (PhD/MS included) were willing to pay a price premium. Approximately 67% of those with technical college and secondary education expressed their willingness to pay a price premium for organically grown produce.

The variable “Number of children under 17 in the family” is very important factor. Almost all families with one or two children under 17 years of age showed their willingness to pay a price premium for organic products.

Conclusions and Recommendations

The study findings suggest that **lack of knowledge and information** is one of the variables playing one of the most important roles in consumption of the organic produce.

An intensive promotion and information campaign should be implemented, so that consumers can get to know the exact meaning of organic produce, their advantages and the regulation procedures that guarantee their quality to avoid the possibility of fraud.

The results of this study showed that the majority of the people surveyed would be willing to acquire organic produce and that certain socio-demographic characteristics do impact the willingness to pay a price premium for organic products. Specifically, the profile of household that would most likely purchase organically grown produce, would be smaller and high-income. Younger households in which females are doing the majority of food purchase also are most probable to pay a price premium for organic produce.

Findings showed that the vast majority of those with higher education were willing to pay a price premium. Almost all families with one or two children under 17 years of age showed their willingness to pay a price premium for organic produce.

Overall, our respondents were very close to the concept of **infrequent and occasional buyers**. According to Michels et al. (2003), cited by Luth and Spiller (2004) infrequent and occasional buyers 1) are rather motivated by hedonic (e.g. taste) or health arguments while regular buyers put more stress on positive external effects associated with organic food (e.g. environmental protection), 2) show a clear preference for supermarkets and farmer markets opposed to organic or health food shops (specialized shops), 3) can be characterized by less knowledge about market facts such as certification labels, specific organic brands, appropriate consumption locations, etc. 4) are generally younger than regular buyers, 5) mainly prefer fruits and vegetables, cereals, while regular buyers chiefly choose organic dairy products or organic meat, and 6) exhibit less willingness to pay a price premium and show little knowledge of prices.

Our respondents qualify to the majority of the abovementioned characteristics. However, they are most likely to become regular buyers, due to appropriate information campaign and promotion activities. It's worth mentioning again that the majority of the people surveyed stated their willingness to obtain organic produce from **specialized shops and pay a price premium**. This is a definitely positive sign towards becoming a regular buyer.

An information asymmetry might emerge among the consumers buying organically grown produce and cause problems in the organic produce market. It is known that organic produce is perceived to be of higher quality than conventionally grown produce, but organic growing methods are relatively costly than conventional ones. Without proper certification, consumers are very limited to verify whether the fruits and vegetables they buy are organically grown, as they are generally limited to visual inspection before purchase, and eating the food after purchase (Ward et al. 2004). The most effective way to resolve the information asymmetry problems is **certification or licensing**. It is possible to alleviate the information asymmetry through certification, when consumers believe the certifying organization. The more trust the consumers place in the certifying institution, the more likely they will be willing to pay a price premium for certified organic produce, and the more effective the certification process will be in enlarging the market for organic produce. Around 32% of the respondents indicated that they would be assured whether the produce is organically grown only if the produce is "**Certified.**" In this regard, local certifying organizations should provide consumers with assurances related to the production methods used and ensure farmers that conventional growers will not be able to make claims to produce organically. More communication efforts should be carried out to educate the consumers and increase their knowledge of organic produce.

Health and physical fitness issues should be placed with organic produce. It's worth trying the organic produce in combination with regionality as a promising market potential. In order to attract new consumers, the organic produce range should be enlarged by innovative and imaginative products. Organic produce should be placed among their conventional equivalents rather than in separate blocks, in order to be noticed by infrequent and occasional buyers. Box scheme – home/office delivery service, already implemented by SHEN, should continue although it's a more expensive way. However, it also helps spreading out the information among the neighbors, office mates, etc. Kindergartens, nursery schools should be approached as potential wholesale consumers of organic produce.

Together with expansion of organic produce market, consumers' perceptions and awareness change as well. The identification of consumer profiles that affect the likelihood of willingness to pay for organic produce will be valuable when the market keeps growing.

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