

## CONSUMER PREFERENCES TO ORGANIC AGRICULTURAL PRODUCTS: THE CASE OF SOUTH SERBIA

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**Abstract:** Organic farming is considered to be increasingly important, because organic agricultural products are healthier than products which are produced by excessive use of chemical substances. Consumers worldwide are increasingly choosing to buy organic agricultural products although they are usually more expensive. The main objective of this paper is to give us an answer about the importance of organic agricultural products for consumers in the territory of Southern Serbia, but also to identify the basic ways to increase demand for these products. The paper presents the results of conducted survey, which indicate that consumers in Southern Serbia give relatively little importance to organic agricultural products. Based on the conducted tests of independence and determined contingency coefficient, it can be seen that the level of education has an impact on the consumer's decision to buy organic agricultural products, while gender don't have influence on this decision. Preferences to organic agricultural products is highest among the population between 36-55 years. These results suggest that it is necessary to take appropriate measures in order to increase demand for agricultural products of organic origin in Southern Serbia. Based on the answers of polled consumers, the growth in demand for these products may be affected by rising living standards, better control of the product on the market by inspection and better education of consumers about the importance of these products for their health through electronic and print media.

**Keywords:** organic agriculture products, consumers, Southern Serbia, health, demand.

### INTRODUCTION

Organic farming is an alternative farming system, which relies on the spreading of organic origin and that focuses on techniques, such as crop rotation, a resistance management, the optimum number of careful sowing of the plants etc [7] [11]. As a result of such agricultural production systems produced agricultural products are of good quality and healthy. This is one of the main reasons why organic agriculture worldwide is becoming increasingly important [14] [9]. Scientists around the world have worked numerous studies dealing with the motives of why consumers buy organic agricultural products. In their studies, the majority has proven that health is the main motive of buying these products [18][8][16][17][3][12]. As for the reasons why consumers do not buy these products, most researchers highlights the price and lack of confidence in the quality of given products [2][19] [4].

According to data from Eurostat (2016) in the EU, the area under organic farming has increased by 21% in 2015 compared to 2010 [6]. In the same period in the territory of the European Union, the largest percentage increase occurred in Croatia 376.9% and Bulgaria 362.2% [5]. This increase in the area under organic farming in the European Union in addition to the target of manufacturers to produce healthy and environmentally sound products and requirements imposed by the state, the great influence had a consumers demand for these products, which has a tendency to increase on the territory of the European Union [10][20].

Unlike the countries of the European Union, in the Republic of Serbia this process occurs much more slowly. The share of the agricultural area under the organic product, in the total area covered by agricultural production was in 2015 amounted to 0.44% [15]. Compared with the EU countries this percentage is only higher than in Malta, while in comparison to other countries in the Union, Serbia lags far behind. These lower results in the Serbian organic farming comes from insufficient government investment in this area and low consumers demand for organic agricultural products. Accordingly in this paper in addition to determining trends of demand for these products by consumers in the territory of the South of Serbia (Nisava, Pcinja and Jablanica district), on the basis of the answers

of the consumers who do not buy the organic agricultural products are identified causes and recommendations for the future government policy in Serbia in this area.

### **MATERIALS AND METHODS**

As has already been stated aim of the study is to determine the preferences of consumers to organic products. In order to respond to the defined aim of research, a survey (shown in Annex 1) was conducted on a sample of 800 respondents from the territory of Southern Serbia, of whom there were 440 women and 360 men. Respondents of different gender, age and level of education were included. Respondents answered the questions of whether they buy organic agricultural products, and if they do not buy about the reasons for such decision.

Despite to the fact that this is a relatively small sample, it can be considered that received answers are enough indicative and can point to important factors of demand and consumption of organic agricultural products in South Serbia. In defining of the sample was taken into account that the number of respondents that have been selected from each district is roughly proportional to the population of districts covered. For the realization of the objective of the research was carried out by personally questioning. This study was conducted at various places ranging from high schools, colleges to the sales points. About three weeks was used for the survey, from 08.04. to 03.05.2017.

For the processing of the data collected we used SPSS software package. From econometric tests we used the Chi-Square test of independence and Contingency coefficient. This tests determines whether there is an association between categorical variables (i.e., whether the variables are independent or related).

The implementation of these tests made it possible to examine whether gender and level of education of consumers have an impact on the decision to purchase organic agricultural products rather than those products which are not produced in accordance with this system of production. The results of these tests show on which group of consumers attention should be given in order to increase the demand for these products [13][1].

Defined hypotheses that are tested in this paper are:

*H1: Demand for organic agricultural products in Southern Serbia is low;*

*H2: Women have a higher propensity to organic agricultural products than man;*

*H3: Educated population gives greater significance to organic products.*

Summarizing the responses of respondents who do not buy organic products, provides an important recommendations for future agricultural policy in the Republic of Serbia.

### **RESULTS OF THE RESEARCH AND DISSCUSION**

Surveyed consumers in the research conducted responded to the question “do you take into account when you buy agricultural products if these products are organic?”. As on the basis of Table 1 can be seen only 14.9% of the subjects answered positively (119 subjects), while even 85.1% of subjects (681 of them) indicated that their decision is not affected whether a particular agricultural product is organic or not. In the group of women 16.4% of them gave a positive response, and in the group of men 13.1% of them.

### **GENDER STRUCTURE OF CONSUMERS OF ORGANIC AGRICULTURAL PRODUCTS**

Taking into account only the group of consumers who identified themselves as buyers of organic products, a test of independence was conducted, whose results are shown in Table. 2 ( $p = 0.191 < 0.05$ ). The results of this test indicate that gender does not have a major impact on the decision on the purchase of organic agricultural products in the territory of Southern Serbia.

### **EDUCATIONAL STRUCTURE OF CONSUMERS OF ORGANIC AGRICULTURAL PRODUCTS**

As for the educational structure of consumers of organic agricultural products, in the South Serbia, the survey showed that the largest number of consumers are university-educated. Of the total respondents, 226 are university-educated, and 63 of them said that they buy organic agricultural products, ie of the total number of university-educated respondents 27.88% of them buy this products. Of the 184 respondents who completed higher school, 21 of them said that they buy given products, or 11.41% compared to the number of respondents with higher education. The largest number of respondents completed secondary education, 390 of them, but only 35 of them use organic agricultural products, meaning that only 8.97% of the total number of respondents who completed secondary school use these products as Table 3 shows.

Data which are presented in Tables 4 and 5 indicate that the level of education has an impact on the consumer's decision to buy an organic product. Considering that the implementation of Sampling test statistics is 42,634 with the realised level of significance  $p = 0.000 < 0.05$ , it can be concluded that between education and the decision for purchase of organic agricultural products there is a strong connection. The high degree of dependence of these two variables can be seen on the basis of the value of the coefficient of contingency, which amounts to 0,225 to the realised level of significance  $p = 0.000 < 0.05$ , as can be seen from and Table 4.

#### **AGE STRUCTURE OF CONSUMERS OF AGRICULTURAL ORGANIC PRODUCTS**

In addition to gender structure and education level of people who buy organic agricultural products, conducted research provides an answer to the age structure of respondents. As in Figure 1 can be seen the largest number of users of these products in the territory of Southern Serbia belongs to the group between 36-55 years. In relation to the number of people who prefer these products listed age group accounts for 51%.

#### **DISSCUSION**

According to the results, which demonstrate that 85.1% of respondents do not buy organic agricultural products on the territory of South Serbia, it can be concluded that the hypothesis H1 is proven, ie the demand for organic products in the South of Serbia is low. The hypothesis H2 is rejected, since the results show that gender does not affect the consumer's decision about purchasing organic agricultural products. Unlike gender, level of education has an impact on consumer's decision. This means that the hypothesis H3 is proven. The reasons why the educated population has a greater preference for organic products is a higher level of awareness of the importance of these products for the health of consumers, as well as higher wages. When we observe the age structure of the respondents, It is certainly worrying that younger people do not give enough importance to organic agricultural products. Therefore, it is necessary to perform in the future appropriate education of this group of consumers and to highlight the importance of the products for their health care.

Surveyed respondents who said they do not take into account that the agricultural products they buy should be organic origin, the questionnaire gave the opportunity to state their reasons for such a decision. By summarizing their responses, as the most common reasons for this decision can be listed:

- Do not take care of a healthy lifestyle (182 respondents);
- Do not know what is organic farming (103 respondents);
- Not sure that the products available on the market as organic are in fact produced in accordance with the rules of organic production, and do not have enough confidence in the institutions that perform control and verification of the quality of these products (206 subjects);
- Due to the weak financial situation I buy cheaper agricultural products and do not take care of it to be of organic origin (190 respondents).

These responses point to the need for the state intervention in order to increase the demand for these products. The first two mentioned reasons of non-use of organic agriculture products show the need for state intervention through the media and organizing various seminars for consumers with the aim of positive impact on the growth of demand. This would lead to a positive external effect on the health profile of the nation and spreading consumer awareness about the importance of healthy eating.

#### **CONCLUSION**

For the purpose of the study a survey was conducted in Southern Serbia on a sample of 800 consumers. The results of the conducted analysis show that the demand for organic agricultural products in the South of Serbia is very low. Demand for these products is higher among educated population while gender has no effect on the demand for these products. The study showed that the main reasons for such low demand for organic products is insufficient awareness of their importance for health and environmental protection, the poor economic situation and lack confidence in the competent institutions that control the accuracy and quality of these products on the market. In this way it is indicated what should be changed in the future policy of the state within this area in order to increase the demand for a given products.

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**Table 1. Contingency Table of Gender Structure and the Number of buyers of agricultural organic products**

			Buy organic agricultural products		Total
			Yes	No	
Sex	Woman	Count	72	368	440
		% within Sex	16.4%	83.6%	100.0%
		% within Buy OAP	60.5%	54.0%	55.0%

	% of Total	9.0%	46.0%	55.0%
	Count	47	313	360
Man	% within Sex	13.1%	86.9%	100.0%
	% within Buy OAP	39.5%	46.0%	45.0%
Total	% of Total	5.9%	39.1%	45.0%
	Count	119	681	800
	% within Sex	14.9%	85.1%	100.0%
	% within Buy OAP	100.0%	100.0%	100.0%
	% of Total	14.9%	85.1%	100.0%

Source: Authors based on the results of the survey.

**Table 2. Test of Independence between Gender Structure and the Number of Consumers of organic agricultural products**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.711 <sup>a</sup>	1	.191
Continuity Correction <sup>b</sup>	1.460	1	.227
Likelihood Ratio	1.725	1	.189
Fisher's Exact Test			
Linear-by-Linear Association	1.709	1	.191
N of Valid Cases	800		

Source: Authors based on the results of the survey.

**Table 3. Table of Contingency of Educational Structure and the Number of buyers of agricultural organic products**

			Buy organic agricultural products		Total
			Yes	No	
Education	Secondary	Count	35	355	390
		% within Education	9.0%	91.0%	100.0%
		% within Buy OAP	29.4%	52.1%	48.8%
		% of Total	4.4%	44.4%	48.8%
	High	Count	21	163	184
		% within Education	11.4%	88.6%	100.0%
		% within Buy OAP	17.6%	23.9%	23.0%
		% of Total	2.6%	20.4%	23.0%
	Higher	Count	63	163	226

		% within Education	27.9%	72.1%	100.0%
		% within Buy OAP	52.9%	23.9%	28.2%
		% of Total	7.9%	20.4%	28.2%
Total		Count	119	681	800
		% within Education	14.9%	85.1%	100.0%
		% within Buy OAP	100.0%	100.0%	100.0%
		% of Total	14.9%	85.1%	100.0%

Source: The authors based on the results of the survey.

**Table 4. Test of Independence between the Educational Structure and the Number of buyers of agricultural organic products**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.634 <sup>a</sup>	2	.000
Likelihood Ratio	39.191	2	.000
Linear-by-Linear Association	37.181	1	.000
N of Valid Cases	800		

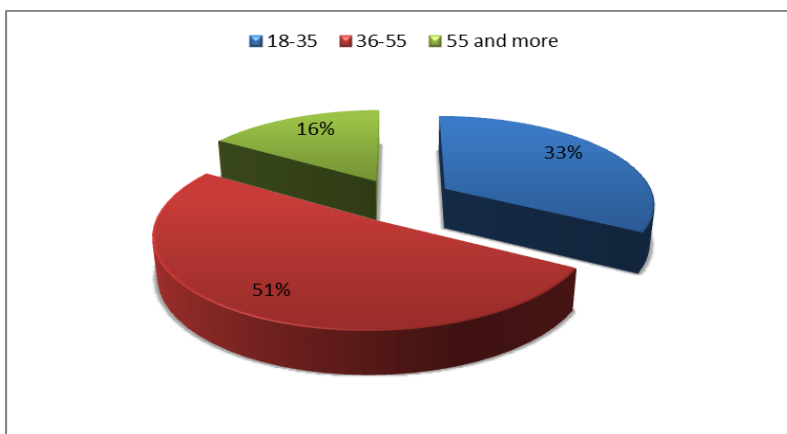
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 27.37.

Source: The authors based on the results of the survey.

**Table 5. Contingency Coefficient of Educational Structure and the Number of buyers of agricultural organic products**

	Value	Approx. Sig.
Nominal by Phi	.231	.000
Nominal Cramer's V	.231	.000
Contingency Coefficient	.225	.000
N of Valid Cases	800	

Source: The authors based on the results of the survey.



**Figure 1. Age structure of consumers who buy organic agricultural products**

Source: The authors based on the results of the survey.

### Annex 1 Questionnaire

5/9/2017 Questionnaire

### Questionnaire

Organic agricultural products

\* Required

1. **Sex \***  
Mark only one oval.

Male  
 Female

2. **Age \***  
Mark only one oval.

18-35  
 36-55  
 more than 55

3. **Education \***  
Mark only one oval.

Secondary school  
 High school  
 Higher education

4. **Do you take into account when you buy agricultural products if these products are organic? \***  
Mark only one oval.

Yes  
 No

5. **If you do not buy organic agricultural products, what are the reasons?**

\_\_\_\_\_

\_\_\_\_\_

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