

RESEARCH ON ORGANIC FOOD PURCHASE IN CROATIA

ISTRAŽIVANJE KUPOVINE EKOLOŠKE HRANE U REPUBLICI HRVATSKOJ

UDK 613.2:502]:658.89(497.5)

Izvorni znanstveni rad

Scientific paper

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Ključne riječi:

ekološka hrana, ponašanje potrošača, stavovi potrošača, anketno istraživanje, Republika Hrvatska

Key words:

organic food, consumer behavior, consumer attitudes, research, Croatia

SAŽETAK

U radu su prikazani rezultati istraživanja provedenog na reprezentativnom uzorku ispitanika pomoću visoko strukturiranog upitnika. U prvom se dijelu iznosi teorijska pozadina te rezultati postojećih istraživanja kupovine ekološke hrane u svijetu i u Republici Hrvatskoj. Rezultati provedenog istraživanja upućuju da ispitanici nisu upoznati s definicijom ekološke hrane. Nadalje, u radu je prikazana percepcija ispitanika o ekološkoj u odnosu na konvencionalnu hranu. Pri istraživanju kupovine ekološke hrane posebna je pozornost posvećena redovitim kupcima ekološke hrane koji su ocjenjivali važnost pojedinih karakteristika u odabiru prodajnog mjesta ekološke hrane. Temeljem provedene hijerarhijske regresijske analize utvrđena je poveza-

ABSTRACT

This paper presents research findings based on the research conducted on a representative sample of respondents using a highly structured questionnaire. The first part of the paper focuses on the theoretical background and overview of the research results related to the research problem in the world and in Croatia. The results of the research which has been conducted indicate that respondents are not familiar with the definition of organic food. Furthermore, the paper elaborates on the Croatian consumers' perception of organic food and conventional food. The research on organic food purchase places a special emphasis on regular buyers of organic food who were asked to evaluate the importance of individual characteristics in choosing a place of

nost učestalosti kupovine ekološke hrane kod redovitih kupaca s percepcijom ekološke hrane i važnosti karakteristika njezina prodajnog mjesta. Istraživanjem su također identificirani glavni i sporedni razlozi nekupovine ekološke hrane te su navedene smjernice koje mogu koristiti proizvođačima ekološke hrane, marketinškim stručnjacima i trgovcima hranom u poticanju ovakve kupovine.

sale for organic food. Based on the hierarchical regression analysis, the frequency of organic food purchases by regular buyers was found to correlate with the perception of organic food and the importance of characteristics of a place of sale for organic food. The research also identified the main reasons for not buying organic food, and it sets out the guidelines which may be useful to organic producers, marketers and retailers in encouraging further purchases of organic food.

1. INTRODUCTION

Organic agriculture was defined by the International Federation of Organic Agriculture Movements as a production system that sustains the health of soils, ecosystems and people. It is a production system which relies on ecological processes, biodiversity and natural cycles adapted to local conditions, rather than the use of inputs with adverse effects.¹ Organic agriculture has developed as an answer to capital intensive agriculture and its negative ecological, social and economic consequences.

In the Republic of Croatia, the legal framework for the regulation and development of organic agriculture is represented by the Act on the Organic Production of Agricultural Products and Foodstuffs which was passed in 2001.² The purpose of organic agriculture is to protect people's health, nature, the environment and consumers. An organic product is every agricultural product and foodstuff which is produced and labeled in accordance with the Act on the Organic Production of Agricultural Products and Foodstuffs and the regulations based on it.³ The development of organic production has also led to a development of the organic food market. While the organic food market in Croatia is underdeveloped, the number of organic farms is growing rapidly.⁴ Consumers are becoming more concerned about their nutrition and health.⁵ Therefore, organic food has become an area of research interest for numerous foreign and domestic authors.

The paper gives an overview of the literature which outlines the most important results of research by foreign and domestic authors linking consumer behavior and organic food. In the third part of the paper, research objectives, research instruments and the characteristics of respondents are given. Next comes the presentation of research results, which are related to respondents' familiarity with organic food, their perception of organic food in relation to conventional food, organic food purchase, predictors of organic food purchase, predictors of the

frequency of buying organic food by regular customers and the reasons for not buying organic food. Research restrictions and recommendations for future research are given after that. The paper ends with concluding remarks.

2. LITERATURE REVIEW

Numerous foreign and domestic authors are engaged in the research of the consumer behavior regarding organic food but a fundamental attribute of the available research studies is their partiality with regard to subjects. It is impossible to unambiguously determine the relationship between consumers' concerns about the food and organic food buying. Research has found that consumers have a positive attitude towards organic food.⁶ Conducted research has provided different insights into consumer behavior and motives for purchasing or not purchasing organic food.

The motives influencing consumers' preference of organic over conventional food are frequent topics of research and some of the most significant research contributions were made by Midmore *et al.*,⁷ Yiridoe *et al.*,⁸ Yiridoe & Bonti-Ankomah⁹. The importance of individual motives for buying or not buying organic food differs from country to country.¹⁰ However, an extensive literature analysis shows that consumers buy organic food because of their concerns about health, the environment and animal welfare and to support local farmers. Nevertheless, health is the strongest motive for buying organic food, as confirmed by research of numerous authors, some of whom are Gracia & de Magistris¹¹, Stobelaar *et al.*,¹² Chen¹³ and a number of others.

Among the main motives for not buying organic food is its price, which is higher when compared to conventional food.¹⁴ Besides the price, foreign literature also identifies some other motives for not buying organic food: actual or perceived inaccessibility of organic food, inadequate organic food assortment, low consumer confidence in

the quality and environmental standards for the production of organic food, low consumer confidence in the process of certification and labeling of organic food, difficulties in identifying organic food and insufficient education of consumers, i.e. their lack of recognition of organic food.¹⁵

The demand for organic food is increasingly based on the concept of values,¹⁶ a place of residence and access to information rather than on socio-demographic factors. However, socio-demographic factors that influence the demand for organic food have also been identified in the literature.¹⁷ Women buy larger quantities of organic food more often than men.¹⁸ Some authors have found the relationship between age and organic food consumption. However, research results can often be contradictory, sometimes showing that organic food consumers are elderly people but there are other sources which indicate that consumers of organic food are younger people. Also, research results differ with regard to the influence of education on organic food consumption. Namely, some researchers have found a positive while others point to a negative correlation between education and organic food consumption.¹⁹

Znaor²⁰ was the first among local authors who studied organic agriculture and indicated the main motives for organic food purchases and consumption as one's concern for health, the perception that organic food is of better quality than conventional food and consumers' belief that organic food purchases support environmental protection and the development of rural areas. The research conducted by Štefanić *et al.*²¹ showed that respondents are not sufficiently informed about organic food and that they do not know how to properly define organic production. Its participants identified organic food quality, label correctness and product brand as the most important features of organic food when compared to conventional food. It is interesting to mention that one third of respondents found organic food to be healthier, tastier and better looking than conventional food. Even 90.0% (n=250) of respondents believe that or-

ganic food is more expensive than conventional food but, nevertheless, they are willing to pay a higher price for organic food.

In 2004, the Henda²² market research agency conducted a survey on organic food among consumers (n=401). It showed that 88.3% of the respondents had heard of organic food, 42.9% of the respondents can recognize organic food in stores, 44.9% of them occasionally consume organic food while 35.6% of the respondents do not consume organic food at all. Radman conducted research about the organic food consumption and the consumers' perception of organic food through a questionnaire on a sample of 179 respondents.²³ The research findings indicate that Croatian consumers think of organic products as healthy, of good quality and tasty. However, they perceive organic food as expensive and are not satisfied with its appearance. Furthermore, the research has shown that consumers do not know where organic food is typically being sold. Most consumers name the city market as a place of sale of organic food. However, organic food in Croatia is not being sold at city markets. Based on such a finding, it can be concluded that consumers equalize organically grown food with traditionally grown food. The research has found that there are consumers who have a more positive attitude to organic food and that they are willing to pay higher prices for organic food. However, more than 70.0% of the respondents said they would purchase more organic food if its price was lower.

Tolušić²⁴ believes that consumers are interested in organic food but, due to a poorly developed distribution network in Eastern Croatia, such products are purchased to a lesser extent. Renko & Bošnjak were interested in the understanding of organic production and shopping habits of consumers in Croatia (n=183). The two authors found that the consumers are still not sufficiently informed about organic food and do not recognize the unique symbol of the Croatian organic product.²⁵ While comparing organic and conventional products, unlike Štefanić *et al.*, the authors confirmed that the majority of

consumers find organic products to be healthier than conventional products²⁶ but, similar to the research results obtained by Znaor, the respondents consider organic products more expensive than conventional ones.²⁷ The research by Renko & Bošnjak showed 64% of the respondents buying organic food. Furthermore, 26.2% of those who buy organic food buy it once a week; bread and other cereal products are the most purchased category (73.8%) and organic food is mostly bought in supermarkets and hypermarkets (40.9%). In the research, authors concluded that demand for organic food indeed exists and confirmed the importance of supermarkets and hypermarkets as the distribution channels of organic food in Croatia.

The GfK²⁸ market research agency conducted research on the organic food consumption using a representative sample of the citizens of the Republic of Croatia older than 15 (n=1,000) through a personal survey of households in May 2008. According to the research, 83.0% of the respondents are familiar with the organic food produced according to the criteria of organic agriculture. The participants older than 65 and the participants with a lower level of education are not familiar with organic food. At the place of purchase, 53.0% of the research participants would recognize organic food, with a higher level of recognition apparent in Zagreb and its surroundings (67.0%) as well as among the respondents with a higher education level (64.0%). The research has shown that organic food is identified with *healthy*²⁹ food. When asked how they recognize organic food in stores, 37.0% of the respondents answered that they do so with the help of the front label, which says: "the Organic Product of Croatia" (Cro. HRVATSKI EKOPROIZVOD), while 36.0% of the respondents mentioned the label *healthy* product on the product or packaging. Regular buyers of organic food are found in and around Zagreb, in Istria and the Primorje region and Dalmatia. The research has shown that buyers of organic food are younger and middle aged people, highly educated and people with a higher personal income.

3. RESEARCH

Numerous foreign and domestic studies on organic food are the evidence of the importance attached to this research topic. Existing domestic research has generally elaborated on consumer familiarity with organic food, their buying habits and attitudes towards organic food. It is the intention of this research to provide a comprehensive overview of the market demand for organic food in Croatia.

The primary research was conducted through personal interviews in households using a highly structured questionnaire in March 2009. For the purpose of this study, a nationally representative sample of the Croatian citizens older than 15 had been defined. The sources of data used in defining the framework for a sample selection were the results of the census conducted by the Croatian Bureau of Statistics in 2001. The stratification is two-dimensional and was conducted according to two following characteristics: (1) *according to the six traditional regions, defined as a set of existing counties* and (2) *according to the four settlement sizes (Table 1)*. Thus, a total of 24 strata were created. *The region of Zagreb and surroundings* includes the Zagreb County and the City of Zagreb; *the Northern Croatia region* includes the Krapina-Zagorje County, the Varaždin County, the Koprivnica-Križevci County, the Bjelovar-Bilogora County, the Virovitica-Podravina County and the Međimurje County; *the Slavonia region* includes the Požega-Slavonia County, the Brod-Posavina County, the Osijek-Baranja County and the Vukovar-Srijem County; *the Lika, Kordun and Banovina region* includes the Sisak-Moslavina County, the Karlovac County and the Lika-Senj County; *the Istria, Primorje and Gorski Kotar region* includes the Primorje-Gorski Kotar County and the Istria County, and *the Dalmatia region* includes the Zadar-Knin County, the Šibenik County, the Split-Dalmatia County and the Dubrovnik-Neretva County.

To disseminate the survey and gather answers from the respondents, a professional market

research agency's network of field operatives was used. After all the questionnaires were completed, the survey data was analysed using the methods of descriptive and inferential statistics.

it possible to define the predictors of the frequency of organic food purchase. The research results offer important implications for practice both for marketers and retailers, as well as for organic food producers.

Table 1: Respondent representation by region and settlement size

Region	Number of respondents	% of respondents
Zagreb and surroundings	249	24.9
Northern Croatia	180	18.0
Slavonia	174	17.4
Lika, Kordun, Banovina	88	8.8
Istria, Primorje and Gorski Kotar	119	11.9
Dalmatia	190	19.0
<i>TOTAL</i>	<i>1,000</i>	<i>100.0</i>
Settlement size	Number of respondents	% of respondents
up to 2,000 inhabitants	400	40.0
from 2,001 to 10,000 inhabitants	153	15.3
from 10,001 to 100,000 inhabitants	212	21.2
more than 100,001 inhabitants	235	23.5
<i>TOTAL</i>	<i>1,000</i>	<i>100.0</i>

The objectives of this research were to:

- o explore the respondents' familiarity with organic food and verify whether they can correctly define organic food,
- o examine the respondents' perceptions of organic food in comparison to conventional food through the statements related to the origin of products, product labeling with an eco-label, taste, product price, the influence on health and consumer rights protection,
- o explore whether the respondents buy organic food and to which extent, and identify regular buyers of organic food,
- o determine whether there are predictors of the frequency of organic food purchase by regular buyers,
- o examine the reasons why respondents do not buy organic food.

The original contribution of this research lies in the performed regression analysis, which makes

3.1. Research instrument

The research instrument was a highly structured questionnaire, composed of several groups of questions related to the consumers' familiarity with the definition of organic food, getting information about organic food, frequency of organic food purchasing, type of organic food that is bought most often, place of purchase of organic food and respondent characteristics. The respondents' perception of organic food compared to conventional food was examined by using the five-point Likert scale. After the buyers of organic food were identified, they rated the importance of individual characteristics in the selection of the organic food purchase place. The respondents who do not buy organic food singled out two reasons (main and secondary) for not buying organic food.

3.2. Respondent characteristics

Table 2 shows the characteristics of respondents – gender, age, education level, number of household members, number of children under the age of 18, employment status, monthly personal income and monthly household income.

Table 2: Respondent characteristics

	n	%
Gender		
Male	471	47.1
Female	529	52.9
Age		
15-17	28	2.8
18-24	136	13.6
25-34	158	15.8
35-44	178	17.8
45-54	170	17.0
55-64	135	13.5
more than 65	195	19.5
Education level		
no elementary school	63	6.3
elementary school	163	16.3
high school (3 years)	196	19.6
high school (4 years)	442	44.2
college or higher education	136	13.6
Number of household members		
1 member	192	19.2
2 members	278	27.8
3 members	224	22.4
4 members	195	19.5
5 members and more	111	11.1
Number of children under the age of 18		
children under the age of 6	127	12.7
children between 7 and 14	156	15.6
children between 15 and 18	102	10.2
no children under the age of 18	615	61.5
Employment status		
full-time employment	384	38.4

	n	%
temporary employment	53	5.3
part-time employment	25	2.5
not-registered	9	0.9
self-employment	16	1.6
unemployed	513	51.3
Monthly personal income		
less than 1,200 kn	73	7.3
1,201-2,000 kn	142	14.2
2,001-3,500 kn	215	21.5
3,501-5,500 kn	197	19.7
5,501-7,000 kn	51	5.1
7,001-9,000 kn	15	1.5
more than 9,000 kn	15	1.5
no monthly personal income	173	17.3
no answer	119	11.9
Monthly household income		
less than 1,800 kn	78	7.8
1,801-3,500 kn	169	16.9
3,501-5,500 kn	137	13.7
5,501-8,000 kn	171	17.1
8,001-11,000 kn	135	13.5
more than 11,000 kn	89	8.9
no answer	221	22.1
Total	1,000	100.0

4. RESEARCH RESULTS

4.1. Respondents' familiarity with organic food

The majority of respondents (m=766) is familiar with the definition of organic food. When examining the respondents' familiarity with the definition of organic food, fewest respondents (11.0%) defined organic food correctly, i.e. the share of the respondents who know that organic food is the food produced using the procedures defined by the Act on the Organic Production of Agricultural Products and Foodstuffs in the total was the smallest. The majority of respondents (52.2%) think that organic food is the food produced without pesticides, chemi-

cal fertilizers, genetically modified organisms and other chemical additives. While 21.0% of the respondents think that organic food is the food produced on family farms using conventional agricultural techniques, 15.7% of them think of organic food as that produced without the use of genetically modified organisms. The research results show the number of the respondents who define organic food correctly as the smallest, which is in line with previous research by domestic researchers. For a more detailed analysis of the respondents' familiarity with organic food and their socio-demographic characteristics see Brčić-Stipčević *et al.*³⁰

4.2. Respondents' perception of organic food in comparison to conventional food

Respondents' perception of organic food in comparison to conventional food was examined by using the Likert scale, which measures respondents' agreement with certain statements, where 1 represented *complete disagreement* and 5 *complete agreement* with the statement.

The research results of the respondents' ($n=766$) perception of organic food in comparison to conventional food showed that the majority of them (53.2%) agreed or completely agreed with the statement that *conventional food is the food without the "organic origin" label*, while 21.7% disagreed or completely disagreed with this statement.

Most respondents (46.2%) agreed or completely agreed with the statement that *organic food is tastier than conventional food* while 28.8% of them expressed their disagreement or complete disagreement.

A vast majority of research participants (83.1%) agreed or completely agreed that *organic food is more expensive than conventional food* and only

6.7% expressed their disagreement or complete disagreement with this statement.

A large portion of respondents (72.1%) agreed or completely agreed with the statement that *organic food is healthier for them and their families than conventional food* while 8.4% of them expressed their disagreement or complete disagreement with it.

The majority of respondents agreed or completely agreed (56.0%) that *organic food with the eco-label is safer for consumption than the food without it* but 15.3% said they disagreed or completely disagreed.

The majority (53.1%) agreed or completely agreed with the statement that *certification, inspection implementation and control of organic food producers protect their consumers' rights*

Table 3: Descriptive indicators of research result analysis

Statement	\bar{x}	sd
Conventional food is the food without the "organic origin" label.	3.44	1.145
Organic food is tastier than conventional food.	3.26	1.177
Organic food is more expensive than conventional food.	4.24	0.939
Organic food is healthier for me and my family than conventional food.	3.94	0.992
Organic food with the eco-label is safer for consumption than the food without it.	3.58	1.027
Certification, inspection implementation and control of organic food producers protect my consumers' rights.	3.49	1.007
The origin of organic food is strictly controlled, unlike the origin of conventional food.	3.47	1.030

note: \bar{x} - mean, sd - standard deviation

while 15.9% of the respondents disagreed or completely disagreed with it.

Moreover, the statement that *organic food is the food with a strictly controlled origin, unlike conventional food*, drew agreement or completely agreement of the 52.6% majority of the respondents while 19.1% of them disagreed or completely disagreed.

Table 3 contains descriptive indicators of the research findings, the mean and standard deviations of the variables related to the perception of organic food in relation to conventional food.

4.3. Organic food purchase

Half of the respondents (50.1%) said they never buy organic food. Organic food is rarely bought by 37.5% of the respondents while 12.4% of them often buy organic food. The abovementioned results are not only specific to the Croatian market. Similar findings about the modest purchase of organic food on a regular basis have been found by Tarkiainen & Sundqvist as well.³¹ Further analysis was conducted on the respondents who frequently buy organic food ($m=95$) and who are referred to hereafter as "regular buyers". Among regular buyers, those who buy organic food 2-3 times a week represented 32.2%, with others who buy it on a weekly basis accounting for 22.3%. Organic food is purchased less than once a month by 18.8% of the regular buyers, and 2-3 times a month by 17.2% of them. The smallest portion of regular buyers (9.5%) buys organic food once a month. Specifying their purchases, regular buyers most often buy fresh fruits and vegetables (31.2%), bread and other cereal-based products (29.4%), milk and dairy products (24.0%). The share of other products such as honey, fresh meat and meat products, baby food in the organic food purchase is smaller (less than 10.0%) for the reason of their under-representation on the Croatian market.³²

Regular buyers state that they buy organic food directly from producers (34.0%), in specialized

health food stores (27.4%), in supermarkets and hypermarkets (23.5%), and the lowest percentage of respondents buy it at open-air markets (15.1%). These results differ from the results of previous research conducted on the Croatian market. The research results obtained by Renko & Bošnjak showed that respondents buy organic food mostly in supermarkets and hypermarkets, with open-air markets as the second most important place of purchase.³³ According to the research conducted by Radman, the largest number of respondents buys organic food at local markets and the smallest number buys it in supermarkets.³⁴ The research conducted by Zanolli & Jukic³⁵ showed that the largest percentage of respondents buys organic food in specialized health food stores while only a small number buys it in supermarkets and hypermarkets, where such products have been under-represented. Therefore, one could conclude that the importance of supermarkets and hypermarkets as an organic food distribution channel has increased.

Then, regular buyers estimated the importance of each of the listed characteristics to them (*price, availability/closeness of a place of purchase, supply diversity, service at a place of purchase*) in choosing a particular place of purchase. These were rated on a scale from 1 to 5, where 1 indicated the characteristics which are *unimportant* to the respondents and 5 the characteristics which are *extremely important*.

Table 4 presents the research results concerning the importance of individual characteristics of a place of purchase to the regular buyers of organic food in their selection.

As may be seen from Table 4, most regular organic food buyers (61.0%) describe price as an important or extremely important characteristic in their selection of a place of purchase while it is rated not important at all or not important by 13.7% of regular buyers. When considering various characteristics in the selection of a place of purchase, the largest majority of regular organic food buyers finds supply diversity (74.7%), fol-

Table 4: Rating of individual characteristics in the selection of a place of purchase by regular buyers (%)

Characteristics	not at all important	not important	neutral	important	extremely important
price	8.4%	5.3%	25.3%	26.3%	34.7%
availability/closeness of a place of purchase	4.2%	8.4%	13.6%	36.9%	36.9%
supply diversity	5.3%	3.2%	16.8%	41.0%	33.7%
service at a place of purchase (advice and similar services)	10.5%	6.3%	12.6%	33.7%	36.9%

lowed by the availability/closeness of a place of purchase (73.8%) and service at a place of purchase (70.6%) to be important or extremely important.

The descriptive indicators of the research results related to the importance of individual characteristics in the regular buyers' selection of a place of purchase at which to buy their organic food are shown in *Table 5*.

Table 5: Descriptive indicators of individual characteristics in the selection of a place of purchase by regular buyers

Characteristics	\bar{x}	sd
price	3.77	1.221
availability/closeness of a place of purchase	3.95	1.100
supply diversity	3.95	1.056
service at a place of purchase (advice and similar services)	3.79	1.296

note: \bar{x} – mean, sd – standard deviation

It can be concluded that the regular buyers of organic food evaluate supply diversity (\bar{x} = 3.95; sd = 1.056) and availability/closeness (\bar{x} = 3.95; sd = 1.100) as the most important characteristics of a place of purchase. Meanwhile, service at a place of purchase (\bar{x} = 3.79; sd = 1.296) and product price (\bar{x} = 3.77; sd = 1.221) are somewhat less important to the regular buyers of organic food.

4.4. Predictors of organic food purchase

The following analysis of research results was conducted on the respondents who said that they buy organic food, regardless of the frequency of purchase (m=420). *Table 6* shows the correlations of the variables in connection with the perception of organic food and of the socio-demographic variables related to organic food purchases.

The purchase of organic food is significantly positive in connection with the following socio-demographic variables: education (r = 0.146, p < 0.01), monthly personal incomes (r = 0.144, p < 0.01) and monthly household incomes (r = 0.139, p < 0.01). *People with a higher level of education, higher monthly personal incomes and higher monthly household incomes buy organic food more often.*

The purchase of organic food is significantly positive in relation to the following variables associated with the perception of organic food: organic food is tastier than conventional food (r = 0.258, p < 0.01), healthier than conventional food (r = 0.294, p < 0.01) and strictly controlled in its production process (r = 0.096, p < 0.01). *The respondents, who believe that organic food is tastier than conventional food, healthier than conventional food and that it is strictly controlled in its production process buy organic food more often.*

In order to determine the factors which influence the purchase of organic food, a hierarchical regression analysis has been conducted in which the purchase of organic food was a dependent variable. The hierarchical regression analysis is based on a single inclusion of new variables or sets of variables in a regression equation according to a predetermined order. After each new step, a new percentage of an explained variance is explained. It tests the unique contribution of a variable or a set of variables listed in a certain step while testing

the significance of the change in the percentage of the explained variance (ΔR^2). In the first step of the analysis which was conducted, socio-demographic variables (age, gender, education level, personal monthly incomes, monthly household incomes, number of household members, children under 18 in a household) were included as predictors (independent variables) and in the second step the variables related to the perception of organic food were added. The results of the hierarchical regression analysis are presented in *Table 6*.

Table 6: Results of the hierarchical regression analysis for the prediction of organic food purchase (m=420)

PREDICTORS	Purchase of organic food				
	β	t	β	t	r
Gender	0.036	0.722	0.053	1.127	0.016
Age	0.150	2.585**	0.099	1.801	0.038
Education	0.151	2.497**	0.150	2.641**	0.146**
Monthly personal income	0.007	0.090	-0.013	-0.193	0.144**
Monthly household income	0.176	2.217**	0.225	2.983**	0.139**
Number of household members	-0.126	-1.676	-0.111	-1.565	-0.022
Children under 18 in a household	0.059	0.909	0.045	0.723	0.004
Conventional food is the food without the "organic origin" label.			0.039	0.816	0.032
Organic food is tastier than conventional food.			0.225	4.143**	0.258**
Organic food is more expensive than conventional food.			-0.118	-2.525*	-0.043
Organic food is healthier for me and my family than conventional food.			0.283	4.865**	0.294**
Organic food with the eco-label is safer for consumption than the food without it.			-0.189	-2.854**	0.075
Certification, inspection implementation and control of organic food producers protect my consumers' rights.			0.061	0.964	0.096*
The origin of organic food is strictly controlled, unlike the origin of conventional food.			-0.030	-0.510	0.065
ΔR^2	$\Delta R^2=0.041^{**}$		$\Delta R^2=0.117^{**}$		
Total R	R=0.443				
Total R ²	R ² =0.196**				

Legend:** p<0.01, * p<0.05

note: r – correlation coefficient, β – standardized partial regression coefficient, R – multiple correlation coefficient, R² – coefficient of determination, ΔR^2 – change of coefficient of determination

Socio-demographic variables and the variables related to the perception of organic food can explain 19.6% of the variance of the organic food purchase ($R^2=0.196$, $p<0.01$). Among the socio-demographic variables, monthly household incomes ($\beta=0.225$, $p<0.01$) and education ($\beta=0.150$, $p<0.01$) appear as the statistically significant predictors of the organic food purchase (the final solution) and among the variables related to the perception of organic food, the following are important: healthier than conventional food ($\beta=0.283$, $p<0.01$), tastier than conventional food ($\beta=0.225$, $p<0.01$), safer for consumption than conventional food ($\beta=-0.189$, $p<0.01$) and more expensive than conventional food ($\beta=-0.118$, $p<0.05$). Since the variables of the perception of organic food as safer for consumption than conventional food and more expensive than conventional food are not in the initial significant correlation (Table 6) with the dependent variable (purchase of organic food), in the regression analysis they appear as suppressor variables (the variables that are not correlated with the criterion but, thanks to the correlation with predictors, they contribute to the prediction). As the results of the hierarchical regression analysis indicate, all the characteristics investigated have a statistically significant contribution to explaining the variance of the organic food purchase. Thus, socio-demographic variables explain 4.1% of the variance while the variables related to the perception of organic food explain 11.7% of the variance of the organic food purchase. Therefore, higher monthly household incomes and a higher level of education of the respondents predict more frequent purchases of organic food. The perception of organic food as healthier than conventional food, as well as tastier than conventional food, predicts more frequent purchases of organic food.

4.5. Predictors of the frequency of organic food purchases by regular buyers

Table 7 contains correlations of the variables related to the perception of organic food and the

importance of characteristics of a place of purchase with the frequency of organic food purchase by regular buyers ($m=95$).

The frequency of organic food purchases by regular buyers is significantly negatively correlated with the following variables related to the importance of characteristics of a place of purchase of organic food: product price ($r=-0.250$, $p<0.01$) and availability/closeness of a place of purchase ($r=-0.320$, $p<0.01$). The regular buyers of organic food who found the product price and the availability/closeness of a place of purchase to be less important buy organic food more often. The variables related to the perception of organic food are not significantly correlated with the frequency of organic food purchases by regular buyers.

In order to determine the factors which influence the frequency of organic food purchases by regular buyers, regression analysis has been conducted. In it the frequency of purchase of organic food was a dependent variable while the statements related to the perceptions of organic food and the importance of the characteristics of a place of organic food purchase were independent variables. The results of the regression analysis are presented in Table 7.

The results of the conducted regression analysis show that the predictor variables included in the analysis explain 25.2% of the variance of the frequency of organic food purchases by regular buyers with respect to the coefficient of multiple determination, $R^2=0.252$ (Table 7). By testing the significance of the coefficient of multiple determination, a statistically significant correlation between the set of predictors and dependent variables was found to exist ($F=2.582$, $p<0.01$).

According to the β -weights, the only predictor variable which contributes to the prediction of the criterion variable (the frequency of organic food purchase) is availability/closeness of a place of purchase, where the β -weight is $\beta=-0.325$ and is statistically significant ($t=-2.432$, $p<0.05$). The regular buyers of organic food who do not consider

Table 7: Results of the regression analysis for the prediction of the frequency of purchase of organic food by regular buyers (m=95)

PREDICTOR VARIABLES	β	t	R
Conventional food is the food without the "organic origin" label.	0.188	1.775	0.135
Organic food is tastier than conventional food.	-0.193	-1.541	-0.002
Organic food is more expensive than conventional food.	-0.160	-1.391	-0.050
Organic food is healthier for me and my family than conventional food.	0.249	1.786	0.166
Organic food with the eco-label is safer for consumption than the food without it.	-0.032	-0.240	0.024
Certification, inspection implementation and control of organic food producers protect my consumers' rights.	0.252	1.792	0.118
The origin of organic food is strictly controlled, unlike the origin of conventional food.	-0.181	-1.368	-0.062
Price	-0.082	-0.716	-0.250**
Availability/closeness of a place of purchase	-0.325	-2.432*	-0.320**
Supply diversity	-0.024	-0.165	-0.059
Service at a place of purchase (advice and similar services)	0.142	1.158	0.076
F, p	F=2.582, p<0.01		
R, R ²	R=0.502, R ² =0.252**		

Legend: ** p<0,01, * p<0,05

note: r – correlation coefficient, β – standardized partial regression coefficient, R – multiple correlation coefficient, R² – coefficient of determination

the availability/closeness of a place of purchase of organic food important are more likely to buy organic food more frequently.

4.6. Reasons for not buying organic food

The respondents who do not buy organic food had to name two reasons for this, with the following listed as possible answers: *high prices, lack of information about the places of purchase, because the quality of organic food is equal to that of conventional food, due to insufficient information on organic food and other reasons.* The first of the above reasons was chosen by the largest percentage of respondents as the *main reason* for not buying organic food. It was followed by the *second* reason stated above, which the largest percentage of respondents named as the

second reason preventing their organic food purchases.

The respondents mentioned *high prices* (54.4%) as the main reason for not buying organic food or for only buying it occasionally. This is consistent with already mentioned existing research results, which point to the problem of high prices of organic food³⁶, that is, unwillingness to pay a higher price for an organic product when compared to the equivalent conventional product. The research conducted by Mintel³⁷ has shown that the existing consumers of organic food accept a higher price of organic food while non-consumers do not buy organic food precisely due to such high prices. That is, the prices of organic food present a negative barrier, which has plagued organic agriculture since the beginning of its development. The difference between the prices of organic food and the prices of conventional food depends on a number of factors, pri-

marily on market supply and demand. In terms of a balanced market supply and demand, organic food prices are on average no more than 50.0% higher than the prices of conventional products. However, the abovementioned thesis also depends on the country of origin, the type of product and the length of the supply chain.³⁸

Furthermore, 12.8% of the respondents do not buy organic food or buy it only occasionally due to a lack of information on the places of its purchase, with another 9.9% of the respondents refraining from organic food purchases because of insufficient information on organic food itself. The distribution of organic food, along with consumer awareness, is a key factor for further growth of the organic food market.³⁹ Moreover, 6.6% of the respondents do not buy organic food or only buy it occasionally because they believe that the quality of organic food is equal to that of conventional food while 16.4% of respondents have other reasons.

For 40.4% of the respondents *insufficient information on organic food* is the second reason for not buying organic food or for buying it only occasionally. Meanwhile, a lack of information on the places of purchase of organic food ranks as the second reason for 30.3% of the respondents. Furthermore, 14.4% of the respondents do not buy organic food or buy it only occasionally because they consider the quality of organic food to be equal to the quality of conventional food. It is interesting to note that no more than 0.8% of the respondents name high prices as the second most important reason for not buying organic food or for buying it only occasionally, and 14.2% of the respondents mention some other reasons.

5. RESEARCH LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

In analyzing the results of this research, it is important to take into account that there are

certain limitations related to it. It is necessary to mention that research limitations are presented by the methods of evaluating the perceptions of organic food which are based on the respondents' subjective estimation. Certain research limitations are also related to the lack of existing research on the purchase of organic food by regular buyers in domestic and foreign literature. Therefore, it is harder to compare the results of this research with the results of previous research.

However, in spite of the limitations outlined above, the research results yield some equally important implications for both the theory and the practice of the organic food purchase behaviour. Considering the fact that this paper overviews the buying behavior of the regular buyers of organic food, whose small sample ($m=95$) itself presents a particular limitation to this research, future research could focus on analyzing the regular buyers of organic food in greater detail. More detailed analysis could also be conducted in relation to socio-demographic and psychographic factors. Such research could surely provide more detailed guidelines to help marketers in the creation of their marketing campaigns, and retailers in the creation of their retail strategies.

6. CONCLUDING REMARKS

The results of the research conducted in March 2009 on a representative sample of the citizens of the Republic of Croatia using a highly structured survey questionnaire in households have shown that *the majority of respondents (76.6%) are familiar with the definition of organic food*. However, its results have also shown that *the smallest number of respondents (11.0%) is familiar with the correct definition of organic food, so it is necessary to continue educating consumers about organic food*. Specifically, the respondents do not know that the production of organic food

in the Republic of Croatia is defined by the Act on the Organic Production of Agricultural Products and Foodstuffs. Taking into account a low level of knowledge about organic food, it can be concluded that *it is necessary to invest additional efforts into raising the awareness of the benefits of organic food consumption.*

Half of the respondents (50.1%) said that they never buy organic food. It is rarely bought by 37.5% of the respondents, while *a small percentage of the respondents (12.4%) often buy organic food.* The existing literature has also remarked that a small percentage of respondents frequently buy organic food. Further analyses of the answers by the respondents who often buy organic food have been conducted. They are referred to as *“regular buyers”* (m=95) because they buy organic food 2-3 times a week (32.2%). Regular buyers most often buy fresh fruits and vegetables (31.2%), and they name direct purchases from producers (34.0%), specialized health food stores (27.4%), supermarkets and hypermarkets (23.5%) as the most important places of organic food purchase. Among the *characteristics of a place of purchase of organic food, the regular buyers of organic food consider supply diversity and availability of a place of purchase to be the most important.* Meanwhile, service at a place of purchase and product price are less important to them.

In order to determine the connection of the organic food purchase to the perception of organic food and socio-demographic variables, a hierarchical regression analysis has been conducted, using the purchase of organic food as

a dependent variable. In the first step, socio-demographic variables were predictors, with the variables related to the perception of organic food used in the second step. *The results of the hierarchical regression analysis have shown that higher monthly household incomes and a higher level of education of the respondents predict more frequent purchases of organic food. Moreover, the perception of organic food as healthier and tastier than conventional food also predicts more frequent purchases of organic food.* The results presented in this research are useful to retailers and marketers alike who may use them to create demand for organic food and stimulate its purchase.

In order to determine the factors which influence the frequency of organic food purchases by regular buyers, regression analysis has been conducted. The frequency of buying organic food was a dependent variable while the statements related to the perceptions of organic food and the importance of the characteristics of a place of organic food purchase were used as independent variables. The results of the regression analysis have shown that *regular buyers, even though they find availability/closeness of a place of purchase of organic food to be less important, are more likely to buy organic food more often.*

The response of the respondents who stated that they do not buy organic food has also been analyzed. These respondents list high organic food prices as the main reason for not buying or for buying organic food only occasionally while insufficient information on organic food ranks as a secondary reason for their lack of purchases.

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