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EMPIRICAL RESEARCH OF ATTITUDES TOWARDS ORGANIC FOOD AMONG CROATIAN CONSUMERS

ABSTRACT

Organic agriculture is a holistic production system, which sustains the natural soil activity, ecosystem and people. This new system is an answer by organic producers to unsustainability of capital intensive agriculture, characterized by mass production, specialization, product standardization and high labour productivity that results in a weaker relation of agriculture to natural conditions and many negative consequences, especially in ecological, social and economic spheres. Development of organic production enabled development of the organic food market. Another incentive for organic food market development is consumers' increased interest in nutrition, health and environment protection. The first segment of this paper will present an overview of research related to definitions and perceptions of organic food. The second segment will present the empirical research of Croatian consumer's perception of organic food. Most research participants are familiar with the term 'organic food', mainly participants from the north

of Croatia. Our research results are in alignment with findings published in literature worldwide and indicate that the most familiar with organic food are participants with at least college education and those with higher monthly incomes. The study also investigated whether consumers understand the definition of organic food and where from do they get information about it. Most of research participants think of organic food as of products produced without use of pesticides, artificial fertilizers, genetically modified organisms and other chemical additives. That is incorrect and indicates that consumers are not sufficiently informed about organic production and that the promotion of organic products is insufficient. In addition, paper compares consumer's perception of organic products and the conventional ones. The research findings indicate that consumers acknowledge the difference between organic and conventional products and find organic food healthier, tastier and more expensive than the conventional food. Finally, this paper contributes to the organic food literature by presenting findings from Croatian market and enabling comparison of organic food perceptions in Croatia with other markets. The research reveals new information necessary for evaluation of organic food market potential in Croatia, relevant for both producers and retailers.

Key words: *organic food, consumer behaviour, empirical research, Croatia*

1. INTRODUCTION

In the last decade, the interest in organic agriculture has grown both within the scientific community and among general public. It is not an easy task to provide precise and universally agreed definition of organic agriculture and organic food (Jones et al., 2001, 358). Organic agriculture is a new production system that represents an answer by organic producers to unsustainability of capital intensive agriculture, characterized by mass production, specialization, product standardization and high labour productivity that results in a weaker relation of agriculture to natural conditions and many negative consequences, especially in ecological, social and economic spheres. Organic food refers to food raised, grown or stored and/or processed without the use of synthetically produced chemicals or fertilisers, herbicides, pesticides, fungicides, growth hormones and regulators or genetic modification. In legal terms, a food product can only be labelled and called organic if 95% of its agricultural raw materials has been produced or grown organically. Also, it is important to note that all food sold as organic must come from growers, producers, processors or importers who are registered and subject to inspection. For example, in Croatia organic production is defined by Act on Organic Production of Agricultural Products and Foodstuffs which came into force in February 2001 (Petljak, 2009, 38).

Organic agriculture is practised in almost all countries in the world, share of agricultural land and number of farms is growing. Latest available data on organic agriculture from 2008 indicate that 1.4 million producers practice organic agriculture in 154 countries world-wide (Willer, Kilcher, 2010). Since European Union has introduced support for the conversion from conventional agriculture towards organic agriculture in the early 1990s, the supply of organic food has strongly increased (Jonas, Roosen, 2005, 636).

In the wake of a series of high profile scares about food safety, consumer demand for organic food has risen dramatically. Growing consumer affluence combined with generally increasing consumer concerns about food quality has also served to stimulate the market (Jones et al., 2001, 360). In addition, consumers have become more concerned about the nutrition, health and food they eat (Gil et al., 2000, 207). Organic food has traditionally been very much a specialist niche market, but nowadays it is becoming an increasingly visible element in the major food retailers' offer. This change can be largely explained by the abovementioned series of food and health scares from the mid 1990s onwards. But, as consumers' awareness of both food safety and a range of ethical issues associated with food production has grown, organic

food market has been moving from a specialist niche market to a much more mainstream position (Jones et al., 2001, 358-360).

The paper gives an overview of the literature about consumer behaviour and perceptions regarding organic food and presents results of empirical research on attitudes towards and perception of organic food in Croatia conducted in March 2009. Research findings are expected to be useful for profiling organic food consumers in Croatia and gathered data gives valuable insights about consumer behaviour for both producers and retailers.

The paper is organized in four major segments. The introduction is followed by the overview of previous research of organic food. Segment three describes research process and results of the empirical research conducted in this study. Finally, concluding remarks are presented in the last segment.

2. AN OVERVIEW OF ORGANIC FOOD CONSUMER'S RESEARCH

There are numerous studies of European organic consumers but it is difficult to generalise the findings across countries or to untangle the complex inter-connections because of the different methodologies and conceptual models that were used. A number of models of food choice has emerged, drawing on contributions from different academic disciplines, including economic factors, sensory aspects of eating, perceptions related to health, nutrition and well-being, lifestyle factors and beliefs about production technologies (Oughton, Ritson, 2007, 260). This part of the paper will shortly address the most important research findings of organic food consumers' perception in the world and in Croatia, and fresh research results about Croatian organic food consumers' perception will be presented later in the paper.

2.1. Organic food consumers' buying behaviour and socio-demographic characteristics

A body of literature exists indicating the importance of socio-demographic characteristics, especially age as an organic purchase factor. Organic food consumers are young to middle aged (Fotopoulos, Krystallis, 2002, 733). Regarding the socio-demographic profile of the organic product buyers, studies agree that the buyers are mainly women, who buy larger quantities and more frequently than men (Magnusson et al., 2001, 211; Fotopoulos, Krystallis, 2002, 747). Also, in accordance with the abovementioned studies,

Radman (2005, 267) found that in Croatia women also tend to buy organic food more often than men.

Presence of children in the family seems to play an important role, influencing positively the organic products purchase, although more attention should be paid to the children's age as organic products purchase factor (Fotopoulos, Krystallis, 2002, 738).

Researchers found positive relation between higher income and higher consumption of organic food. Organic buyers, on average, have higher purchasing power (Aertsens et al., 2009, 149). Also, research results show that organic food consumers are better educated (Fotopoulos, Krystallis, 2002, 733).

GfK market research agency (2008) conducted a research of organic food consumption on a representative sample of citizens of the Republic of Croatia in May 2008. The research established that consumers of organically produced food are of younger and middle age, highly educated and individuals with higher personal income, what is in alignment with research results from foreign literature.

2.2. Attitudes towards organic products and perception of organic food

Results of numerous studies (Štefanić et al., 2001; Squires et al., 2001; Pearson, 2001; Conner, 2004) confirmed that consumers have positive attitudes towards organic products (Radman, 2005, 264). Organic food is perceived as healthier than conventional alternatives and that was one of the most commonly mentioned reasons for its purchase (Chinnici et al., 2002; Harper, Makatouni, 2002, 289; O'Donovan, McCarthy, 2002, 354-355; Hill, Lynchehaun, 2002; Pearson, 2001). The view that organic products are tastier than the conventional ones is not widely proven. The attitude of a better taste is probably connoted indirectly, as a result of the view that the organic fruits and vegetables are produced in small quantities and are of more tasty varieties. Taste is rated high enough in countries such as Germany and the UK (Fotopoulos, Krystallis, 2002, 737).

Research done by Znaor (1996) indicated that main motives for organic food purchases and consumption were concern of one's health, better quality of organic products compared to products from the conventional production and the consumers' belief that organic food purchases support environment protection and development of rural areas. Research done by Štefanić et al. (2001, 245) implies that one third of research participants (out of 250) found

organic food healthier, tastier and better looking than conventional food. Participants found product quality, correctness of labels and product brand to be the most important features of organic food. Radman (2005) researched organic food consumption and consumers' perception of organic food. Research findings indicate that Croatian consumers think of organic products as healthy, of good quality and tasty. Tolušić (2006) in the final report of the Ministry of science, education and sport's project 'Organic food market potential in Eastern Croatia' states that consumers are interested in consumption of organic food because of its positive effects on health.

For consumers it is impossible to check the authenticity of organic products, so it is necessary to build up a control system with clearly defined rules for production methods and labelling of certified products. Studies suggest that trustworthy labels guaranteeing organic production are very important for consumers (Wier, Calverley, 2002, 53).

2.3. Consumers' knowledge of organic agriculture

Radman (2005, 268) found that Croatian consumers are not well informed about organic production. Although the law on organic agriculture in Croatia came into force in February 2001, only 11% of respondents (n=179) thought that organic agriculture is properly regulated by law, and 61% do not fully agree with that statement. More than 25% of respondents do not know anything about legislation of organic agriculture. These results demonstrate insufficient confidence of Croatian consumers in food standards in Croatia, but they also served to underline inadequate consumer knowledge of organic legislation (Radman, 2005, 271). These findings are consistent with the study of Štefanić et al. (2001, 244-245). Results showed that 64% of research participants think they have sufficient information on organic food. However, only 86 out of 250 participants correctly described the principles of organic production.

Renko and Bošnjak (2009) were interested in shopping habits of consumers in Croatia and their understanding of the term 'organic food'. They used 183 consumers in a sample to conduct the research. They found that consumers are still not sufficiently informed about organic food and do not recognise the unique symbol of the Croatian organic product. Comparison of organic and conventional products, unlike Štefanić et al. (2001), indicates that more consumers find organic products healthier than conventional products (Renko, Bošnjak, 2009, 386).

In Croatia, market research agency Henda (Misir, 2008) did an organic food research in 2004 amongst 401 consumers. Research results indicated that 88.3% participants have heard of organic food and 42.9% can recognize organic food in retail shops.

If organic products are viewed as the organic production results, 83% of GfK (2008) research participants are familiar with the term. Participants older than 65 years of age (65%) and participants with lower education (49%) did not hear of organic food. At the point of sale, 53% of research participants would recognize organic food, while higher level of recognition is apparent in Zagreb and its surroundings (67%), and with the consumers with a college diploma (64%).

2.4. Sources of information about organic food

Research regarding sources of information about organic food done by Chinnici et al. (2002, 191) on the sample of 552 respondents showed that 24.8% of the consumers had obtained information from specialised magazines, 33.8% from television, 10.4% from daily newspapers, 9.0% by talking to friends and/or colleagues, 18.8% from specialised sales outlets and finally, 3.2% from 'other' sources (for example at secondary school or university). For comparison, Renko and Bošnjak (2009, 384) found that the biggest proportion of examinees had obtained information from television (25%), newspapers and magazines (25.6%). Similar research results were observed in a study done by Ranilović et al. (2008) where 26% of examinees stated that they get information about organic food from newspapers and magazines and 23% from television and radio stations.

3. EMPIRICAL RESEARCH OF CROATIAN CONSUMERS' FAMILIARITY WITH ORGANIC FOOD

3.1. Methodology

Organic food in Croatia was a subject of interest in many research papers, none of which adopted the holistic approach and their mutual characteristic was fragmentation and narrow focus. So, in order to ascertain Croatian consumers' organic food shopping habits and their familiarity with organic food's characteristics research was conducted on a nationally representative sample of 1000 participants. Research was conducted in March 2009, using a highly structured questionnaire. The professional market research agency's

network of field operatives was used to disseminate the survey and gather answers from desired respondents. After all surveys were completed, authors proceeded with the data analysis and interpretation. Research goals were to establish the level of familiarity of consumers with the organic food concept controlled for the socio-demographic characteristics of consumers, followed by exploring how consumers perceive organic food and through which channels they receive information about organic products. Additionally, researchers were interested in establishing the difference in perception of organic food and conventional food, in order to compare findings with the earlier worldwide researches. Research results and additional clarity in consumers' perception of the organic food market are of great importance for both Croatian organic food producers and retailers, who recognized the potential of this market niche and are investing efforts to take the full advantage of its profitability potential.

Data gathered in research were analysed using the software SPSS 18.0. Statistical analysis encompassed analysis of absolute and relative frequencies, shown in tables and graphs bellow. In order to test the statistical significance of relation between variables, *Chi-square test* was used. Further on, factor analysis of items connected with the perception of organic food towards conventional food was conducted.

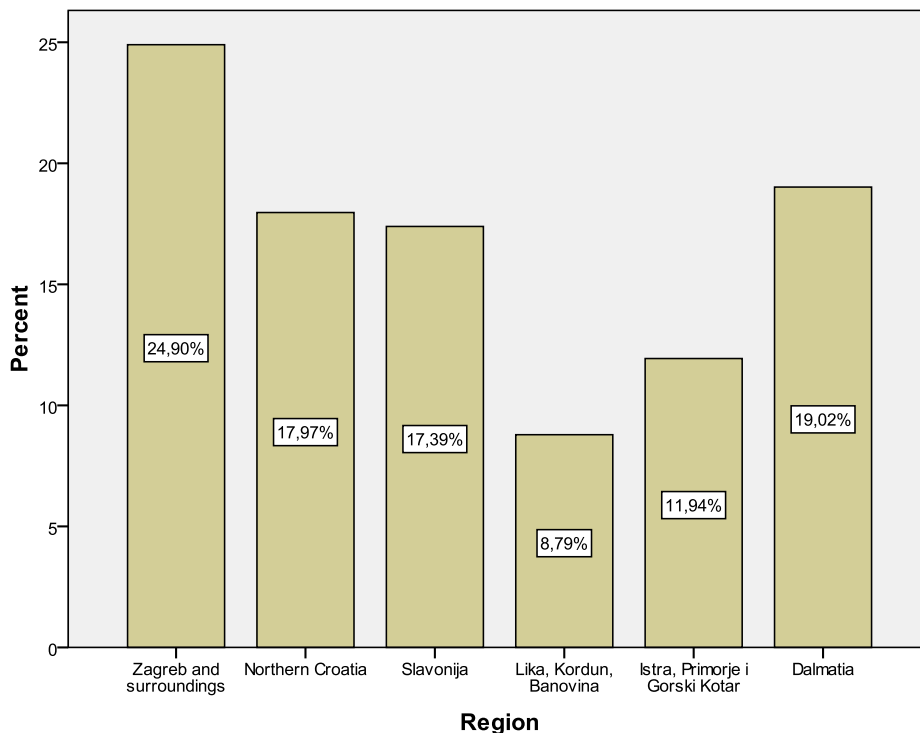
3.2. Sample description

Out of 1000 research participants, there were 471 males (47.1%) and 529 females (52.9%). Participants were between 15 and 86 years old and the average age was 45.5 years. The participants from different age groups were equally represented (18–24 years, 25–34 years, 35–44 years, 45–54 years, 55–64 years and 65 years and over), except the youngest ones (15-17 years), as the smallest number of research participants was from that age group.

Research covered the Republic of Croatia, which was divided in six traditional regions, defined as groups of counties¹. Participants' distribution across regions is shown in Graph 1.

¹ Region Zagreb and surroundings: Zagreb county and the City of Zagreb; region Northern Croatia: Krapinsko-zagorska county, Varaždinska county, Koprivničko-križevačka county, Bjelovarsko-bilogorska county, Virovitičko-podravska county and Međimurska county; region Slavonija: Požeško-slavonska county, Brodsko-posavska county, Osječko-baranjska county and Vukovarsko-srijemska county; region Lika, Kordun and Banovina: Sisačko-moslavačka county, Karlovačka county and Ličko-senjska county; region Istra, Primorje and Gorski kotar: Primorsko-goranska county and Istarska county; region Dalmatia: Zadarsko-

Graph 1. Representation of regions in the sample (%)



Source: primary research

Regarding the marital status of research participants, most (53.1%) were married. There was 29.7% singles, and a small proportion of widowers, widows and divorced individuals.

The most consumers from the sample had a high school diploma (63.8%), 16.3% finished elementary education and college or higher education finished 13.6% consumers. The smallest proportion of participants (6.3%) was without completed elementary school.

One half of participants (51.3%) were unemployed, 38.4% were employed and proportions of other employment categories (fixed-term contracts, part-time, self-employed, not registered) were only minor.

kninska county, Šibenska county, Splitsko-dalmatinska county and Dubrovačko-neretvanska county.

In the structure of research participants' occupation, most were retired (27.4%), then, 16.7% were qualified workers, 15.2% clerks, 10% pupils. Other occupation categories (housewives, entrepreneurs, low and middle management) were only minor in the sample structure.

Most examinees were individuals in charge of the household, 44.2%. 34.9% of respondents were the 'head of the family', while 20.9% were other family/household members. Most households had two members (27.8%), 3-member households were represented with 22.4%, and 4-members and single households were equally represented, with 19.5% and 19.2% respectively. The smallest number of households in the sample was with five and more members (11.1%).

There was no children under 18 years of age in 69.1% of households, six-year-olds were found in 12.7% of households, kids between seven and fourteen lived in 15.6% of households and 10.2% of households had teenagers between 15 and 18 years.

Next observed socio-demographic category was housing. Majority participants (65%) lived in houses, while the rest lived in apartment buildings.

Then, 67.3% research participants found his or her economic status as the average one. They are followed by examinees who found their economic status to be somewhat below average (14.9%) and those who found it much below average (9%), 8% of examinees found it somewhat better than average and only 0.8% said it was much better than average. For most participants (90.7%) income comes from the non-agricultural activities. 8.3% examinees combines agriculture and other activities as their income sources and only 1.1% lives of agriculture.

Personal monthly income varies greatly across the sample. Research results demonstrated that 17.3% of research participants had no source of income, while 11.9% did not answer. From the remaining 708 answers, the most frequent income category was 2.001 – 3.500 HRK (30.4%), then the 3.501 – 5.500 HRK range (27.8%), 1.201- 2.000 HRK (20.1%), under 1.200 HRK (10.3%), 5.501 – 7.000 HRK (7.2%) and the least frequent categories were 7.001 – 9.000 HRK (2.2%) and over 9.000 HRK (2.1%).

Subsequently, 22.2% examinees did not state their monthly household income, so the sample for further analysis had 778 elements. Answers were

equally distributed in 5.501 – 8.000 HRK (22%) and 1.801 – 3.500 HRK (21.8%) categories. They are followed by categories 3.501 – 5.500 HRK (17.6%) and 8.001 – 11.000 HRK (17.3%), up to 1.800 HRK (10%), and finally, category over 11.000 HRK (11.4%).

3.3. Analysis of empirical results

3.3.1. Familiarity with organic food in relation to socio-demographic characteristics

The following segments are dedicated to the overview of research participants' familiarity with the term 'organic food', controlled for the socio-demographics of the sample (Table 1).

Table 1. Familiarity of examinees with the term 'organic food' by gender

Gender	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
Male	356	75.4	116	24.6
Female	412	78.0	116	22.0
Total	768	76.8	232	23.2
χ^2, p	$\chi^2 = 0.950; p > 0.05$			

Source: primary research

Most examinees (76.8%) were familiar with the term 'organic food'. *The statistically significant difference between genders in familiarity with the term 'organic food' was not found ($\chi^2 = 0.950; p > 0.05$).* Males (75.4%) and females (78%) were equally familiar with the term 'organic food'.

Table 2. Familiarity of examinees with the term 'organic food' by age

Age	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
15 – 17 years	18	64.3	10	35.7
18 – 24 years	91	66.9	45	33.1
25 – 34 years	129	81.6	29	18.4
35 – 44 years	153	86.4	24	13.6
45 – 54 years	140	82.4	30	17.6
55 – 64 years	109	80.7	26	19.3
65 + years	127	65.1	68	34.9
Total	767	76.8	232	23.2
χ^2, p	$\chi^2 = 40.239; p < 0.01$			

Source: primary research

76.8% of examinees from all age groups are familiar with the term 'organic food' as can be seen from the Table 2. *There is a statistically significant difference in familiarity with the term 'organic food' between different age groups ($\chi^2 = 40.239$; $p < 0.01$).* The biggest group of research participants familiar with the term 'organic food' comes from the 35–44 age group (86.4%). They are followed by the 45–54 age group (82.4%), 25–34 age group (81.6%) and 55–64 age group (80.7%). The lowest proportion of consumers familiar with the 'organic food' was found in 18–24 age group (66.9%), older than 65 years (65,1%) and in examinees between 15 and 17 years of age (64,3%).

Table 3. Familiarity of examinees with the term 'organic food' by region

Region	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
Zagreb and surroundings	185	74.3	64	25.7
Northern Croatia	156	86.7	24	13.3
Slavonija	126	72.4	48	27.6
Lika, Kordun, Banovina	70	79.5	18	20.5
Istra, Primorje, Gorski kotar	93	78.2	26	21.8
Dalmatia	137	72.1	53	27.9
Total	767	76.7	233	23.3
χ^2, p	$\chi^2 = 15.382$; $p < 0.01$			

Source: primary research

A statistically significant difference of consumers' familiarity with the 'organic food' between regions was found ($\chi^2 = 15.382$; $p < 0.01$). Examinees from all regions are highly familiar with the term 'organic food' (76.7%). However, the most familiar are residents of the Northern Croatia (86.7%) and the least familiar are examinees from Dalmatia (72.1%).

Table 4. Familiarity of examinees with the term 'organic food' by marital status

Marital status	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
Single	215	72.4	82	27.6
Married	441	83.2	89	16.8
Widower, widow, divorced	112	65.1	60	34.9

Total	768	76.9	231	23.1
χ^2, p	$\chi^2 = 28.695; p < 0.01$			

Source: primary research

There is a statistically significant difference of participants' familiarity with the 'organic food' between marital statuses ($\chi^2 = 28.695; p < 0.01$). The most familiar with the 'organic food' are married participants (83.2%), followed by singles (72.4%), while the least familiar are widowers, widows and divorced examinees (76.9%).

Table 5. Familiarity of examinees with the term 'organic food' by education

Education	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
No elementary school	35	56.5	27	43.5
Elementary school	104	63.8	59	36.2
High school (3 years)	157	80.1	39	19.9
High school (4 years)	348	78.7	94	21.3
College or higher education	124	90.5	13	9.5
Total	768	76.8	232	23.3
χ^2, p	$\chi^2 = 46.441; p < 0.01$			

Source: primary research

As seen in Table 5, education is also a socio-demographic category for which the statistically significant difference of participants' familiarity with the 'organic food' was found ($\chi^2 = 46.441; p < 0.01$). The term 'organic food' is the most familiar within the college or higher education group (90.5%) and the least within the no elementary school group (56.5%).

Table 6. Familiarity of examinees with the term 'organic food' by employment

Employment	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
Employed	322	84.1	61	15.9
Employed – fixed-time contracts	36	67.9	17	32.1
Part-time	17	68.0	8	32.0
Not-registered (black market)	8	88.9	1	11.1
Self-employed	12	75.0	4	25.0
Unemployed	372	72.7	140	27.3
Total	767	76.9	231	23.1
χ^2, p	$\chi^2 = 20.534; p < 0.01$			

Source: primary research

There is a statistically significant difference in examinees' familiarity with the term 'organic food' in respect to their employment status ($\chi^2 = 20.534$; $p < 0.01$). The most familiar group with the term 'organic food' are non-registered workers (88.9%), but there are very few of them in the sample, so more relevant is information that 84.1% of employed research participants were familiar with the term 'organic food'. The least familiar with the 'organic food' were employees with fixed-time contracts (67.9%).

Table 7. Familiarity of examinees with the term 'organic food' by occupation

Occupation	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
Higher manager, professional, expert, freelancer	54	90.0	6	10.0
Low or middle manager	15	57.7	11	42.3
Clerk	128	84.8	23	15.2
Qualified worker	134	79.8	34	20.2
Unqualified worker	20	74.1	7	25.9
Entrepreneur	31	88.6	4	11.4
Other paid occupation	4	80.0	1	20.0
Unemployed (temporarily)	79	84.9	14	15.1
Retired	193	70.4	81	29.6
Housewife	46	75.4	15	24.6
Pupil/student	63	63.0	37	37.0
Total	767	76.7	233	23.3
χ^2, p	$\chi^2 = 40.582$; $p < 0.01$			

Source: primary research

As read from Table 7, there is also a statistically significant difference in participants' familiarity with the 'organic food' controlled for variable occupation ($\chi^2 = 40.582$; $p < 0.01$). The most familiar with the term 'organic food' are higher managers, professionals, experts and freelancers (90%) and the least familiar are low and middle managers (57.7%).

Table 8. Familiarity of examinees with the term 'organic food' by household status

Household status	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
Individual in charge of the household (housewife)	344	77.8	98	22.2

Host, 'head of the house'	278	79.7	71	20.3
Other household members	146	69.9	63	30.1
Total	768	76.8	232	23.2
χ^2, p	$\chi^2 = 7.515; p < 0.05$			

Source: primary research

A statistically significant difference between participants' familiarity with the 'organic food' and variable household status was also established ($\chi^2 = 7.515; p < 0.05$). The most familiar with the 'organic food' are 'heads of household' or hosts (79.7%). They are followed by individuals in charge of the household, often housewives (77.8%), while other household members are the least familiar with the 'organic food' (69.9%).

Table 9. Familiarity of examinees with the term 'organic food' by individual monthly income

Individual monthly income (HRK)	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
Less than 1.200	48	66.7	24	33.3
1.201 – 2.000	91	64.1	51	35.9
2.001 – 3.500	171	79.5	44	20.5
3.501 – 5.500	164	83.2	33	16.8
5.501 – 7.000	41	80.4	10	19.6
7.001 – 9.000	15	100	0	0
More than 9.000	14	93.3	1	6.7
Total	544	76.9	163	23.1
χ^2, p	$\chi^2 = 29.860; p < 0.01$			

Source: primary research

As observed in Table 9, there is a statistically significant difference in participants' familiarity with the 'organic food' term controlled for variable individual monthly income ($\chi^2 = 29.860; p < 0.01$). With the term 'organic food' the most familiar are consumers with income between 7.000 and 9.999 HRK – all of them, hence, there were only 15 of them in the sample. The segment of consumers with more than 9.000 HRK income was equally represented in the sample and 93.3% of them were familiar with the 'organic food'. The least familiar with the 'organic food' are examinees with the lowest income: income between 1.200 and 2.000 HRK (64.1%) and individuals with less than 1.200 HRK per month (62.8%).

Table 10. Familiarity of examinees with the term 'organic food' by household monthly income

Household monthly income (HRK)	Familiarity with 'organic food'			
	YES		NO	
	f	%	f	%
Less than 1.800	49	62.8	29	37.2
1.801 – 3.500	118	69.4	52	30.6
3.501 – 5.500	112	81.8	25	18.2
5.501 – 8.000	130	76.0	41	24.0
8.001 – 11.000	107	79.9	27	20.1
More than 11.000	76	85.4	13	14.6
Total	592	76.0	187	24.0
χ^2, p	$\chi^2 = 19.350; p < 0.01$			

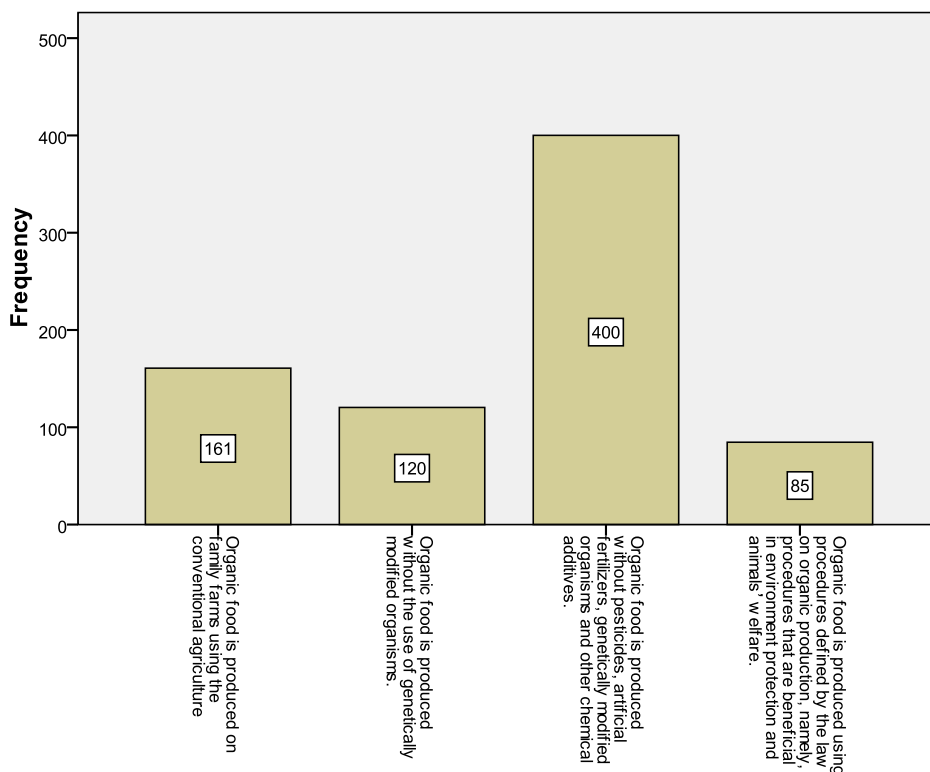
Source: primary research

There is a statistically significant difference in examinee's familiarity with the 'organic food' relative to household monthly income ($\chi^2 = 19.350; p < 0.01$). The most familiar with the 'organic food' are consumers who live in households with more than 11.000 HRK income per month (85.4%) and the least familiar are examinees from households with the lowest monthly income, under 1.800 HRK (66,7%).

3.3.2. Familiarity with the organic food definition and means of acquiring information on organic food

Most research participants (400) think that organic food is the 'food produced without pesticides, artificial fertilizers, genetically modified organisms and other chemical additives'. While 161 examinee think organic food are the 'products produced on family farms using the conventional agriculture', 120 think of organic food as of 'products produced without the use of genetically modified organisms'. The smallest proportion (85) of research participants stated that they think of organic food as of 'food produced using procedures defined by the law on organic production, namely, procedures that are beneficial for environment protection and animals' welfare'. Research results again indicate a poor understanding of what organic food is and how it is produced. Even more, the results are devastating as the smallest share of examinees correctly defined the organic food and one can conclude that consumers still do not understand the concept of organic food and the principles of its production. Similar research findings and lower actual than stated awareness of organic production was also found by Fotopoulos and Krystallis (2002, 744).

Graph 2. Level of recognition of the organic food definition



Source: primary research

Table 11. Organic food's source of information (%)

To gather information on organic food you most frequently use	f	%
The point of sale	93	12.5
Television	414	55.5
Radio	19	2.5
Newspapers/magazines	94	12.6
Internet	39	5.2
Formal education/seminars	3	0.4
Communication with family/friends/acquaintances	71	9.5
Professional literature	4	0.6

Fairs/exhibitions of organic food	8	1.0
Caterers (restaurants, hotels)	1	0.1
Total	745	100

Source: primary research

The most researched consumers get the information on organic food through television programmes (55.5%). Equal proportions of examinees (12.6%, 12.5%) receive information on organic food from newspapers/magazines and at the point of sale, then, 9.5% participants receives the information from daily communication with family, friends and acquaintances, 5.2% on-line and 2.5% through the radio. Other information distribution channels are represented in minor proportions. Similar results can be found in foreign and domestic literature.

3.3.3. Perception of organic food compared to conventional food

As discussed in the research overview, several authors examined the factors that motivate consumers to choose organic rather than conventional food.

Empirical research investigated the consumers' perception of organic food in relation to their perception of conventional food products. The five-point Likert scale was used in questionnaire, enabling consumers to express their agreement with certain statements (Marušić, Vranešević, 1997, 240), where 1 represented complete disagreement and 5 was a complete agreement with the statement. Attributes examined were subjective and included healthiness, taste, labelling, quality, price, consumer rights and controlled product origin. These attributes were chosen according to the results of previous research studies, similar as in Radman (2005, 266).

The majority of examinees agreed or completely agreed (53.2%) that conventional food is all food without the organic products label, while 21.7% examinees disagreed or completely disagreed with this statement.

Most examinees (46.2%) agreed or completely agreed with the statement that organic food is tastier than conventional food, while 28.8% examines expressed their disagreement or complete disagreement.

A great proportion of research participants (83.1%) agreed or completely agreed that organic food is more expensive than conventional food and only 6.7% research participants did not agree (disagree or completely disagree).

Again, a large proportion (72.1%) of questioned consumers agreed (agree and completely agree) that organic food is healthier for them and their family than conventional food, while 8.4% opposed (disagree or completely disagree) to this statement.

The next statement said that organic food labelled with the organic sign was safer for consumption than items without that sign and 56% examinees agreed or completely agreed and 15.3% examinees answered disagree or completely disagree.

The majority of examinees agreed or completely agreed (53.1%) with the statement that certification, inspection implementation and control of producers of organic food protect their consumers' rights, while 15.9% examinees disagreed or completely disagreed with this statement.

Also, the majority of examinees agreed or completely agreed (52.6%) with the statement that organic food is food with strictly controlled origin, unlike the conventional food, while 19.1% examinees disagreed or completely disagreed with this statement.

The results of descriptive statistic analysis of variables related to the consumers' perception of organic food compared to conventional food are shown in Table 12.

Table 12. Descriptive indicators of research results analysis of consumers' perception of organic food compared to conventional food

Statement	\bar{X}	sd
Conventional food is food without 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 my family and me than conventional food.	3.94	0.992
Organic food labelled with the organic sign is safer for consumption than items without that sign.	3.58	1.027
Certification, inspection implementation and control of organic food producers protect my consumers' rights.	3.49	1.007
Origin of organic food is strictly controlled, unlike the origin of conventional food.	3.47	1.030

Note: \bar{X} - mean, sd – standard deviation

Source: primary research

3.3.4. Factor analysis of items connected with the perception of organic food compared to conventional food

Principal component factor analysis of 7 statements connected with perception of organic food compared to perception of conventional food gives a one factor structure, as can be seen from the factor matrix (Table 13). All 7 items of the scale can be explained by one factor which explains 44.8% of Variance.

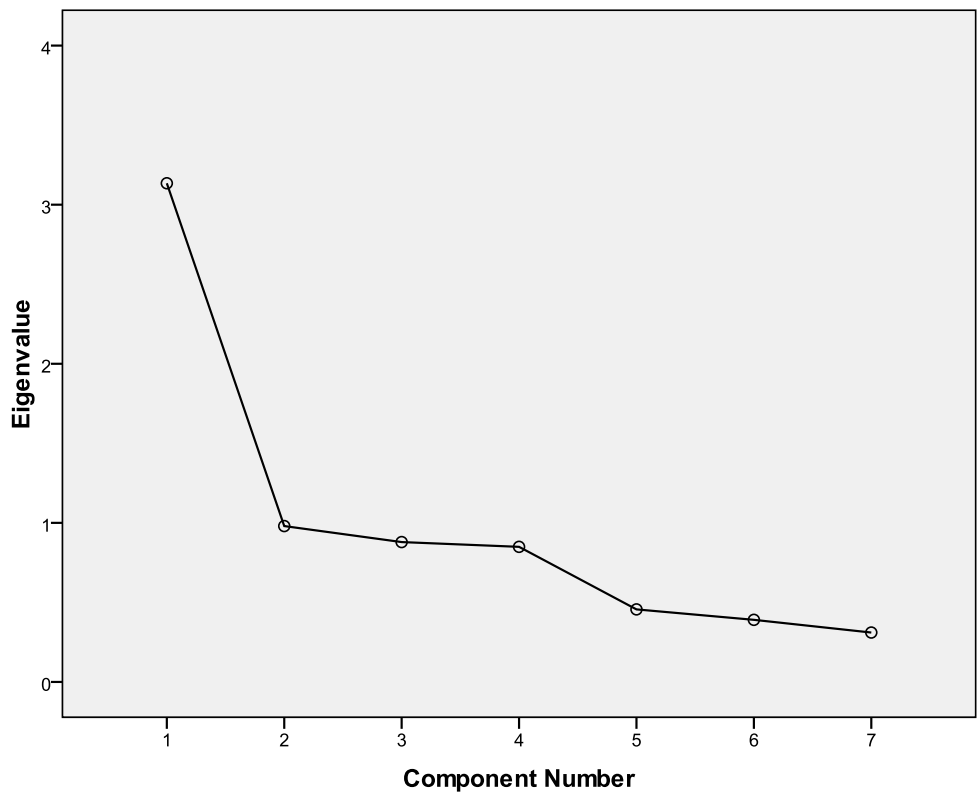
Table 13. Factor matrix

Statements	Factor
	1
Organic food labelled with the organic sign is safer for consumption than items without that sign.	0.827
Certification, inspection implementation and control of organic food producers protect my consumers' rights.	0.792
Origin of organic food is strictly controlled, unlike the origin of conventional food.	0.760
Organic food is healthier for my family and me than conventional food.	0.745
Organic food is tastier than conventional food.	0.649
Conventional food is food without organic origin label.	0.368
Organic food is more expensive than conventional food.	0.366
Extraction Method: Principal Component Analysis.	

Source: primary research

Table 13 shows factor loadings, correlation between the original variables and the extracted factor. All variables are highly correlated with the extracted factor, which can be defined *the factor of perception of organic food*. With the component analysis factor model, later factors extracted contain both common and unique variance. The scree test is used to identify the optimum number of factors that can be extracted before the amount of unique variance begins to dominate the common variance structure (Hair, Jr. et al., 2010, 110). Scree plot (Graph 3) confirms the principal component method and indicates existence of one factor.

Graph 3. Scree plot diagram



Source: primary research

Internal consistency or reliability of the extracted factor was calculated by Cronbach's alpha and $\alpha=0.77$, which means that the reliability of the factor of perception of organic food is high.

4. CONCLUSION

The paper gives the insight into consumers' behaviour and perception between organic food and conventional food in world and in Croatia based on literature review and the empirical research. Survey results indicate that perception of organic food in Croatia is overall positive. Consumers find organic food healthier, tastier and more expensive than the conventional food. The aim of the research was to collect the socio-demographic characteristics of the organic food consumers, useful for the identification of a profile of the Croatian consumer of organic food. Besides that, the research aimed to identify the consumers' acquaintance with the exact definition of organic agriculture. Survey also investigated information channels used to gather information on organic food.

Results of the research give valuable insights for retailers in planning their market activities in order to attract future organic food consumers. Research results imply that education of consumers must become one of first objectives for local organic producers, as well as retailers. Further on, it is important to increase consumers' knowledge of organic production and organic food. Factor analysis of statements comparing perception of organic food and of conventional food extracted one factor (the factor of perception of organic food) and reliability of the factor was high.

Future research and additional studies are needed to better discriminate between consumer groups in order to offer a more detailed profile of organic food consumer in Croatia.

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