Consumers' attitudes analysis regarding organic food in Eastern Croatia

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ABSTRACT

European movement regarding increased consumer concern toward food safety and quality as well as health and nutritional aspect of food is present in Croatia as well. Consumer perceptions and attitudes regarding organic food were analyzed on sample of 124 examinees, by means of face-to-face survey. Aim of paper was to create founded marketing strategies, market segments identification, sales channels and promotion activities. Survey was conducted in association with BIOPA (Free working association for organic production) advertisement actions and students of Faculty of Agriculture in Osijek during 2007. The questionnaire included questions regarding consumer behavior (frequency and structure of organic food consumption), consumer attitudes concerning organic food price, purchase motives, reasons which indicate negative reactions on consumers, supply satisfaction, place of purchase suitability, importance of declaration elements and attitudes related to producer (origin). Survey data were statistically analyzed according to PC applications SAS for Winodws, StatSoft Statistica and Excel for determination ANOVA, correlation and multy-regresion. 86% of respondents claimed to buy organic food, mostly fruits, vegetables and bread. Respondents expressed their willingness to pay higher price for organic food (15%). Most of respondents (64%) consider organic food prices reasonably higher. Motives for purchasing organic food (health aspect, tastiness, environment concerns and habit) were analyzed using Likert 1-5 scale evaluation. According to respondents' answers, health impact in the most significant motive of purchase (4.45), followed by tastiness (4.38), environment aspect (4.19) and habit (3.13). The same principle was used for determining reasons which indicate negative reactions on consumers. According to that, price (3.65) and availability (3.33) are the most important reasons. Less important are inadequate promotion (2.77), package (2.65) and product appearance (2.51). Most of respondents (61%) think organic food supply is in compliance with demand. 60% of respondents intend to increase organic food purchase (12% in average). Respondents ranked purchase in specialized shops (4.06), directly from farms (4.04) and in green markets (4.02) as the most suitable for organic food. Regarding declaration elements, shelf life (4.37), absence of harmful substances (4.22), functional food elements (4.02) and nutritional value (4.03) are the most important elements. Respondents prefer regional and local producers (4.28 and 4.04, respectively) over foreign producers (2.86). According to survey analysis, future promotional activities should be focused on health aspect, taste and environmental care (the most important purchase motives). Certain attention should be concentrated on price and availability (the reasons which indicate negative reactions on consumers) as well as development of direct sale and specialized shops (the best ranked places of purchase). Moreover, producers should pay certain attention to declaration elements (especially marking shelf life, absence of harmful substances, functional food aspects and nutritional value).

Keywords: organic food, consumer behavior, preferences, prices, Eastern Croatia

1. INTRODUCTION

In the last fifteen years, Croatian agriculture tries to follow European organic movement developed due to increased demand for healthy food. Increased demand toward organically produced food correlates with increased consumers' concern and care regarding food safety and quality as well as health and nutritional aspects of food. Mentioned trend is a kind of reaction to numerous health affair related to processed food (TAKACS, 2007; DAVIES ET AL., 1995). It is approved by the fact that globally, demand for organic food increases by average annual rate of 20% (SQUIRES ET AL., 2001). Results of previous authors regarding attitudes and preferences of consumers (ŠTEFANIĆ ET AL., 2001; MAGNUSSON ET AL., 2001; RADMAN, 2005) confirm positive consumers' attitudes toward organic products, which are considered as healthier than conventional.

Aim of paper was to get the basis for creation founded marketing plans, market segments' identification, sale channels and advertisement of organic food based on analysis of consumers' perceptions and attitudes regarding organic food. Similar research about consumers' motives and attitudes relating to organic food in Croatia is conducted in Zagreb (RADMAN, 2005) and Osijek (ŠTEFANIĆ, 2001). Researching in Osijek is conducted in 1999, therefore this paper can use as a control of organic awareness in Eastern Croatia.

2. MATERIAL AND METHODS

Face-to-face survey with a view to determine perceptions of consumers regarding organic food consumption was carried out in association with BIOPA advertisement actions (in Osijek, Vukovar and Vinkovci, 72 questionnaires) and students of Faculty of Agriculture in Osijek during 2007 (52 questionnaires). Questionnaire was consisted of 21 questions.

Questions can be lined up in a few groups:

- sample description (sex, age, place of residence, education, monthly family income and number of family members),
- buying behavior (frequency and structure of purchase),
- consumer attitude regarding price (extra price adequacy, willingness to pay extra price for organic food),
- analysis of purchase motives (nutritional-health impact, taste, environment care and habit),
- reasons which indicate negative reactions on consumers (price, availability, inadequate promotion, package and look of product),
- supply satisfaction and consumers' future intentions (opinion regarding supply and demand of organic food, place of current organic food purchase, evaluation of purchase place suitability, future intentions),
- organic product's declaration elements (shelf life; nutritional value; presence of useful functional food elements – antioxidants, vitamins, etc; absence/low level of harmful substances - preservatives, heavy metals, hormones; organic product's certificate; product's brand; package and producer) and
- consumers' opinion regarding product's origin (whether consumer prefer local producers, regional producers or foreign producers).

Most of questions were two or multiple answer questions and only three were open-ended questions. Several attributes of organic food (purchase motives, reasons which indicate negative reactions on consumers, suitability of purchase places, declaration elements) were measured by means of five-point Likert scale anchors of 1=low of bad degree of the characteristic and 5=high or good degree of the characteristic. The data obtained from the survey were analyzed with PC applications SA for Windows (SAS Institute Inc., Cary, NC, USA), StatSoft Statistica and Excel for determination of variance analysis (ANOVA), correlations and multy- regression dependences.

3. RESULTS AND DISCUSSION

3.1. Sample description

The sample consisted of 59 women and 65 men. The average age of the respondent was 27. Division to age groups pointed that respondents up to 25 years participated 64%, 25-40 years 26%, 40-55 years 6% and respondent older than 55 years 4%. Two thirds of respondents had high school degree (65%), 23% completed primary school, and only 10% had a university education. 30% of respondents live in rural areas and 70% in cities. The average monthly family income was 914€ (13%<400€, 45% 400-800€, 25% 800-1200€, 8% 1200-1600€, 9%>1600€). The average family was consisted of 4.06 members.

3.2. Buying behavior

First question in questionnaire was related to purchase frequency of organic food. 22% of respondents claimed to buy organically-grown food often, 64% buy such products rarely and 14% of respondents don't buy organic food at all. This data presents important shift in Eastern Croatia buying behavior considering findings from 1999 (ŠTEFANIĆ, 2001), when only 20% of respondents claimed to be consumers of organic products. In the other hand, the findings regarding purchases of organic food in our study seemed to be overestimated (as in studies of RADMAN, 2005; GIL ET AL., 2000; FRICKE AND VON ALVENSLEBEN, 1995). One of reasons for the high proportion of organic consumers in our study could be the choice of the sample. It can be assumed that visitor of the BIOPA advertisement actions and students of Faculty of agriculture are inherently more interested than average consumers in organic products. Another reason can be that Croatian consumers are not very well informed about organic production. Therefore, more than half of consumers claimed to buy organic food (mostly organic fruits, vegetables and bread) in supermarkets where products with organic labels are very rare. Similar conclusion could be drawn for those products purchased directly from producers. It could be assumed that consumers made their own assessment that purchased products were organically grown.

According to survey analysis, women buy organic products slightly more frequently (90%) than men (81%). Organic products are more frequently bought by more educated respondents (87%) who live in cities (86% vs. 83% from rural areas), consumers older than 55 (95%) and consumers with small children (87%). According to this study, family monthly income didn't have important impact on organic purchase.

Addressing structure of organic consumption, (fruits, vegetables, meat, milk, bread etc.), survey data showed that respondents mostly buy organic fruits (61%), vegetables (44%) and bread (24%), similar as KOPIĆ, 2008 AND RADMAN, 2005. Naturally, statistically important correlation were find between purchasing organic products and fruit purchase ($r=0.37^{***}$), vegetables ($r=0.23^{***}$), meat ($r=0.23^{***}$) and milk ($r=0.32^{***}$), as well as between organic fruits and vegetables ($r=0.44^{***}$), vegetables and meat ($r=0.18^{**}$), milk and bread

($r=0.34^{***}$). Very strong correlation was assessed between organic meat and milk purchase (0.49^{***}). Organic food purchase amounts 7% in food expenditures.

3.3. Price willingness

Of respondents, 64% assume organic food prices reasonably higher, 10% don't understand justification of organic extra prices, 18% think prices are too high and 8% consider that prices of organic and conventional products should be the same. Adequacy of organic food extra prices were more approved by women (64% vs. 63% men), more educated consumers (92.33% consumers with university degree), consumers in group of 25-40 years old (77%) and older than 55 (100%), wealthier consumers (90% people with monthly family income more than 1200€) and urban consumers (66% vs. 55% rural). Opinion about extra price adequacy correlated with education ($r=0.26^{***}$) and monthly family income ($r=0,21^{**}$). In average, consumers express their willingness to pay 15% extra price (in compliance with 11-20% - RADMAN, 2005). Thus, willingness for paying extra price considerably correlates with respondents' age ($r=0.24^{***}$).

3.4. Purchase motives and reasons which indicate negative reactions on consumers

Purchase motives and reasons which indicate negative reactions to consumers according to respondents' characteristics are displayed in table 1 and 2.

Table 1: Purchase motives (Likert scale from 1 to 5; 1= low of bad degree of the characteristic and 5=high or good degree of the characteristic) according to respondents' characteristics

group	(n)	health	taste	environment	habit	P	$LSD_{0,05}$
all	124	4.45 a	4.38 a	4.19 a	3.13 b	<0.0001	0.27
GENDER							
male	65	4.34 a	4.34 a	4.09 a	2.98 b	<0.0001	0.38
women	59	4,58 a	4.42 a	4.31 a	3.29 b	<0.0001	0.38
AGE							
< 25	80	4.41 a	4.38 a	4.21 a	3.10 b	<0.0001	0.34
25-40	31	4.58 a	4.45 a	4.42 a	3.35 b	<0.0001	0.51
40-55	8	4.13	3.88	3.25	3.00	0.326	n.s.
> 55	5	4.80 a	4.80 a	4.00 a	2.40 b	0.0018	1.20
EDUCATION							
primary school	29	4.17 a	4.34 a	3.76 a	3.10 b	0.0003	0.59
high school	82	4.52 a	4.38 a	4.30 a	3.10 b	<0.0001	0.33
university	13	4.61 a	4.46 a	4.38 a	3.23 b	0.0031	0.79
RESIDENCE							
rural	37	4.27 a	4.46 a	4.32 a	2.97 b	<0.0001	0.51
urban	87	4.53 a	4.34 a	4.14 a	3.20 b	<0.0001	0.32
INCOME							
< 400€	16	4.31	4.13	4.38	3.56	0.212	n.s.
400-800€	56	4.46 a	4.39 a	4.23 a	3.18 b	<0.0001	0.37
800-1200€	31	4.42 a	4.35 a	4.13 a	2.97 b	<0.0001	0.61
1200-1600€	10	4.70 a	4.30 a	4.10 a	2.60 b	<0.0001	0.79
> 1600€	11	4.45 a	4.82 a	4.00 ab	3.18 b	0.0153	1.02

Source: survey

According to Table 1 data, respondents consider health impact as the more significant purchase motive (4.45) than taste (4.38) and environment awareness (4.19). The least important purchase motive is habit (3.13). Statistically, significant differences were confirmed between three the most important purchase motives and habit as the least important motive.

Although this statistic pattern more or less dominates when respondents are divided into groups (except rural population and respondent with higher family income who preferred taste over other aspects), still average marks varied.

Reasons which indicate negative reactions to organic food purchase are price (3.65) and availability (3.33), and the less important reasons are promotion (2.77), package (2.65) and look (2.51). The answers were similar considering all respondents and grouping them by gender, age, education etc. The exceptions were respondents with university degree and respondents with monthly family income from 800 to1200€ and >1600€ who listed availability as the most important reason with negative purchase reactions.

Table 2: Reasons which indicate negative reactions to consumers according to their characteristics (Likert scale 1 to 5; 1= low of bad degree of the characteristic and 5=high or good degree of the characteristic)

group	(n)	price	availability	promotion	package	look	P	$LSD_{0,05}$
all	124	3.65 a	3.33 b	2.77 c	2.65 c	2.51 c	<0.0001	0.31
GENDER								
male	65	3.57 a	3.22 ab	2.88 bc	2.75 c	2.55 c	<0.0001	0.45
women	59	3.75 a	3.46 a	2.64 b	2.53 b	2.46 b	<0.0001	0.43
AGE								
< 25	80	3.88 a	3.28 b	2.88 c	2.69 c	2.54 c	<0.0001	0.39
25-40	31	3.26 a	3.23 a	2.52 b	2.45 b	2.45 b	0.0043	0.59
40-55	8	4.00 a	3.88 ab	2.88 abc	2.75 bc	2.38 c	0.0235	1.15
> 55	5	2.20 ab	3.80 a	2.80 ab	3.20 ab	2.00 b	0.2305	1.75
EDUCATION								
primary school	29	3.62 a	3.17 ab	2.76 b	2.83 b	3.17 ab	0.0942	0.67
high school	82	3.76 a	3.32 b	2.79 c	2.53 cd	2.30 d	<0.0001	0.37
university	13	2.92 ab	3.85 a	2.46 b	2.77 b	2.46 b	0.0384	0.98
RESIDENCE								
rural	37	3.97 a	3.14 b	2.73 b	2.62 b	2.84 b	<0.0001	0.58
urban	87	3.52 a	3.41 a	2.78 b	2.66 bc	2.37 c	<0.0001	0.37
INCOME								
< 400€	16	3.56 a	2.81 ab	3.19 ab	2.63 b	1.63 c	0.0013	0.92
400-800€	56	3.80 a	3.34 b	2.61 c	2.55 c	2.43 c	<0.0001	0.44
800-1200€	31	3.67 a	3.70 a	2.94 b	2.84 b	2.90 b	0.0044	0.6187
1200-1600€	10	3.40 a	2.80 ab	2.20 b	2.30 ab	2.00 b	0.1029	1.12
> 1600€	11	3.18	3.45	3.00	2.91	3.54	0.7246	n.s.

Source: survey

3.5. Supply satisfaction and future buying intentions

The vast majority of respondents (61%) consider that organic food supply is in accordance with organic food demand. Regarding current place of purchase, the most of respondents buy organic products in supermarkets (58%) and green (city) markets (28%), less directly from farms (12%) and in drugstores (2%). In order to examine respondent's perception regarding suitability of particular purchase place (supermarkets, drugstores, green (city) markets, sale directly from farms, sale within rural tourism services and specialized shops), it's employed five-point Likert scale with 5 meaning very suitable for organic purchase and 1 meaning not suitable at all. Respondents ranked purchase in specialized shops (4.06), directly from farms (4.04) and in green markets as the most suitable for organic food. Less suitable they consider purchase of organic food as service within rural tourism (3.69), in supermarkets (3.64) and in drugstores (3.40). Statistically significant differences are noticed between specialized shops and farms (best ranked) on the one hand and supermarkets and drugstore (worst ranked) on the other. Consumers' perception about suitability of purchasing organic food on particular place depends on their sociological characteristics (sex, age, education, incomes and place of residence) – Table 3. Most or respondent (60%) intend to increase organic food purchase (12% in average).

Table 3: Suitability of organic food purchase place

group	(n)	Super-market	Drugstore	Green market	Farm	Rural tourism	Specialized shop	P	$LSD_{0,05}$
all	124	3.64 c	3.40 c	4.02 ab	4.04 a	3.69 bc	4.06 a	<0.0001	0.32
GENDER									
male	65	3.49 b	3.03 c	4.11 a	4.14 a	3.89 ab	4.03 a	<0.0001	0.44
women	59	3.80 ab	3.81 ab	3.91 ab	3.93 ab	3.47 b	4.10 a	0.1732	0.47
AGE									
< 25	80	3.67 cd	3.31 d	4.09 ab	3.94 abc	3.75 bc	4.16 a	0.0001	0.38
25-40	31	3.68 b	3.74 ab	3.84 ab	4.39 a	3.71 ab	4.03 ab	0.2979	0.68
40-55	8	3.12	2.87	3.87	3.87	3.00	2.87	0.6890	n.s.
> 55	5	3.60	3.60	4.20	3.80	3.80	4.60	0.8530	n.s.
EDUCATION									
primary school	29	3.72 bc	3.34 c	4.38 a	3.59 bc	3.41 c	4.07 ab	0.0085	0.62
high school	82	3.63 cd	3.41 d	3.93 abc	4.13 a	3.73 bcd	4.09 ab	0.0022	0.40
university	13	3.69	3.69	3.69	4.38	4.00	4.15	0.7273	n.s.
RESIDENCE									
rural	37	3.78 ab	3.24 b	3.94 a	3.81 ab	3.78 ab	4.24 a	0.0688	0.63
urban	87	3.57 c	3.47 c	4.05 a	4.14 a	3.65 bc	3.99 ab	0.0009	0.38
INCOME									
< 400€	16	3.44	3.06	3.50	3.94	3.19	3.44	0.6763	n.s.
400-800€	56	3.70 b	3.66 b	3.96 ab	4.03 ab	3.64 b	4.30 a	0.0226	0.45
800-1200€	31	3.55 bc	3.03 c	4.19 a	4.06 ab	3.84 ab	3.90 ab	0.0062	0.64
1200-1600€	10	3.60	3.30	3.90	4.20	4.40	4.40	0.3958	n.s.
> 1600€	11	3.91	3.73	4.64	4.00	3.64	3.91	0.5870	n.s.

Source: survey

3.6. Consumers' evaluation of declaration importance

Declaration elements (shelf life, nutritional value, absence of harmful substances, functional food elements, certificate, producer, brand and package) were evaluated by respondents using Liker scale from 1 to 5 (5 is very important, 1 is not important at all). When all consumers are taken together, shelf life (4.37), absence of harmful substances (4.22), functional food elements (4.02) and nutritional value (4.03) are the most important elements, while certificate (3.69), producer (3.60), brand (3.10) and package (2.85) are less important elements. Considering statistical significant differences between declaration elements, there are three groups of elements: shelf life, harmful substances, functional food elements and nutritional value are the most important elements, in second group are certificate and producer, and brand and package are elements of third group (p<0.0001). Consumer perception of declaration elements importance depends on their sociological characteristics. Male and women respondents gave highest marks to shelf life (4.38 men vs. 4.36 women), but men gave lower marks to all other declaration elements with producer (origin) as exception. The oldest group of respondents gave highest marks for all declaration elements in comparison with younger groups with brand as exception. The biggest differences are between the oldest and the youngest respondents. Similar conclusion can be drawn for respondents with highest education level and for two respondents' groups with highest incomes, but regarding to impact, the answers are more specific.

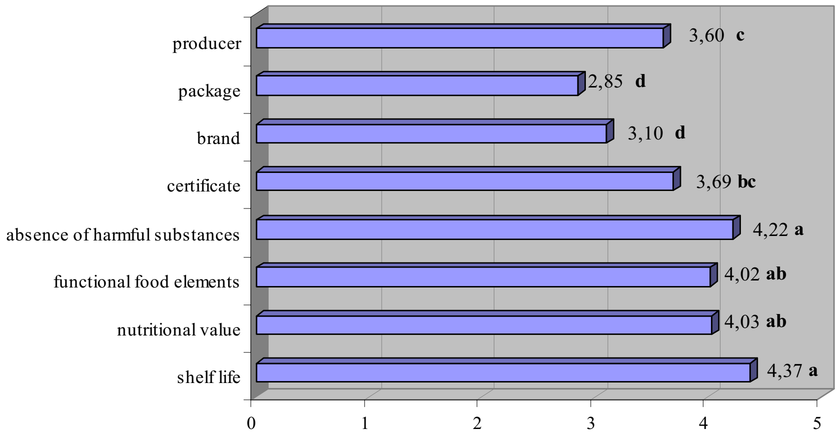

Figure 1: Declaration elements evaluation

3.7. Origin of organic products

The vast majority of respondents (89.52%) pay attention to product's origin. They prefer (by using Likert scale from 1 to 5) regional and local producers (4.28 and 4.04, respectively) over foreign producers (2.86).

4. CONCLUSIONS

Face-to-face survey (124 respondents) regarding organic food pointed that there is demand for organic food in Eastern Croatia because 86% of respondents buy organic products. Consumers mostly buy organic fruits, vegetables and bread. In average, consumers are willing to pay 15% extra price for organic food. Future promotional activities should be focused on health aspect, taste and environmental care (the most important purchase motives). Certain attention should be concentrated on price and availability (the reasons which indicate negative reactions on consumers) as well as development of direct sale and specialized shops (the best ranked places of purchase). Moreover, producers should pay certain attention to declaration elements (especially marking shelf life, absence of harmful substances, functional food aspects and nutritional value – the most important declaration elements).

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