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**ANALYSIS OF CONSUMERS' LOCAL PURCHASING IN OSIJEK-
BARANYACOUNTY**

**ANALIZA POTROŠAČA LOKALNIH PROIZVODA U OSJEČKO-
BARANJSKOJ ŽUPANIJI**

ABSTRACT

The research is conducted using a survey in Osijek-BaranyaCounty. Buying locally produced products has become more important for producers in Osijek-BaranyaCounty since the beginning of the economic crisis. The knowledge on who buys locally produced products, why and for what reasons, might provide vital information for Slavonian producers. Successful product differentiation and finding optional marketing and promotional solutions require specialized knowledge on consumer's preferences concerning locally produced products. The findings of this paper point to suitable marketing and promotional tools for different consumer segments based on preferences concerning locally produced products. The information collected is analysed using statistical methods.

Key words: local purchasing, local producers, Osijek-BaranyaCounty, marketing, statistical methods

SAŽETAK

Istraživanje je provedeno pomoću ankete u Osječko-baranjskoj županiji. Kupnja lokalno proizvedenih proizvoda postala je važnija za proizvođače u Osječko-baranjskoj županiji od početka gospodarske krize. Znanje o tome tko kupuje lokalno proizvedene proizvode, zašto i iz kojih razloga, može pružiti vitalne informacije za slavonske proizvođače. Uspješna diferencijacija proizvoda i pronalaženje optimalnih marketinških i promotivnih rješenja

zahtijevaju specijalizirano znanje o preferencijama potrošača lokalno proizvedenih proizvoda. Rezultati ovog istraživanja ukazuju na odgovarajuće marketinške i promotivne alate za različite segmente potrošača na temelju njihove sklonosti lokalno proizvedenim proizvodima. Prikupljeni podaci se analiziraju pomoću statističkih metoda.

ključne riječi: *kupnja lokalno proizvedenih proizvoda, domaći proizvođači, Osječko-baranjska županija, marketing, statističke metode*

1. Introduction

Due to an increase in competitiveness in the global food system and a number of scandals concerning food quality and origin, consumers have become more sensitive towards the origin of the food they eat. Consumers are becoming more interested in a healthy lifestyle, which also leads to an increase in interest in ecological food, but also the purchase of locally produced foods which are considered a healthier choice. This trend influenced many food markets in the world: in 2008, the value of the market for ecological products tripled since 1999, from \$15.2 billion to \$50.9 billion (Action Plan of the Development of Ecological Agriculture in the Republic of Croatia 2011 to 2016, pp. 8). This trend of an increase in demand for healthy and local food might prove to be a solution to many problems Slavonian producers are faced with. Namely, the recent economic crisis influenced farmers from Osijek-BaranyaCounty, even lower prices of their products and also lower prices of commodities from the European Union due to the accession to the EU etc. Local producers should turn to producing ecological and organic products, but also those products consumers could recognize and appreciate among many others in the Croatian food markets.

In order to find their position in the market, local producers must understand their consumer better. The information on who buys their products, for what reason and what makes them choose local products would allow for a better marketing plan and promotion of locally produced foodstuff. Segmentation of the consumers in Osijek-BaranyaCounty according to willingness to pay for locally produced food should help local producers to better understand their consumer wants and how to shape their offer.

The goal of this paper is to acquire information on the demand for locally produced food in Osijek-BaranyaCounty, gain insight on the characteristics of consumers of such products and their willingness-to-pay for locally produced food. The goal is to be accomplished through statistical methods such as factor analysis, cluster analysis and ANOVA. The findings of the article should provide food producers in Osijek-BaranyaCounty with information on how to effectively modify their marketing mix and communicate to their prospective consumers and target market.

The following section of this paper provides a literature review of studies dealing with consumer demand of locally and ecologically produced food. The third section contains the information about the survey conducted and the results of the statistical analysis of the collected data. The fourth section contains suggestions of marketing solutions for each segment of consumers. The last section provides a conclusion and suggestions for further study.

2. Literature review

Consumers prefer locally produced food because they consider it to be healthier, more environmentally friendly, or they choose to be more supportive of local rural communities. This preference may lead to willingness to pay a premium price for a product. This is why this subject has proven to be very important and interesting to researchers.

Locally produced food was defined differently by different authors and consumers, but most people consider either food grown within a country, region or a county as local (Zepeda and Leviten-Reid, 2004, 2). Darby et al. (2006) found that state boundaries may define what is considered local.

There is a large body of studies dealing with consumer awareness and willingness to pay for locally produced food. Timmons et al. (2008) claim that the sales of locally grown food increased significantly in USA during the past twenty years. Zepeda and Leviten-Reid (2004) found that about 2.8 million people bought their food at farmers' markets on a weekly basis, generating about \$888 million in sales. Darby et al. (2006) found that consumers are willing to pay higher prices for locally produced foods in the case of strawberries. Carpio and Isengildina-Massa (2008) found that consumers from South Carolina had strong preferences towards South Carolina products, stating they were willing to pay price premium of about 27% for state-grown produce and 23% for state-grown animal products compared to out-of-state products. Giraud, Bond and Bond (2005) argued that consumers' willingness to buy local products and also pay a premium price for them varies among different states of USA. Wang, Sun and Parsons (2010) found that consumers from Vermont exhibited a strong preference and willingness to pay for locally grown apples compared with apples from other regions of USA. Jekanowski, Williams and Schiek (2000) found that 60% of Indiana consumers were likely to purchase and consume locally produced foods. The remaining 40% of consumers were either neutral or at least somewhat likely to buy locally produced food. They found that income of the household, perception of quality of Indiana agricultural products and the time a consumer resided in the state positively related to the likelihood of purchasing local products.

Authors found that consumers buy locally produced food due to different motivations and reasons. Zepeda and Leviten-Reid (2004, 4) found that consumers bought locally produced foods in farmers' markets because they enjoyed buying directly from farmers and also the market atmosphere. Other reasons were freshness and flavor of food, quality and longer lasting food, support for local farmers, entertainment and direct contact with farmers. The aforementioned authors found enthusiastic support for local food production among consumers, but less will to buy such products unless direct benefits from buying local are perceived. Some shoppers thought local food provided direct environmental, economic, communal and health benefits, so they chose to look for labels indicating locally produced food (Zepeda and Leviten-Reid, 2004, 5). Loureiro and Hine (2002) found that those consumers concerned about nutritional value and freshness are more willing to pay a premium price for local than organic or GMO-free potatoes. Van der Lans et al. (2001) found that certificates about region of origin of olive oil allow for higher prices for two reasons: cultural identification for consumers from the same region and perceived quality. Burchardi et al. (2005) found that consumers perceive milk from local farms to be trustworthy, of high quality, and that buying such products enables them to support local producers. Williams and Hammitt (2001) found that willingness to pay for organic food is positively related to beliefs that it was more environmentally friendly and supportive of local small-scale agricultural production.

The trend in the world and the EU being an increase in the demand of locally and ecologically produced food, it is very likely that consumers in Croatia might become more interested in these types of food and ready to pay premium prices for them. The producers in Osijek-Baranya County already have the advantages of enough farming land and surfaces for ecological farming which allows them to produce and market adequate quantities of food. But in order to decide on who they should sell or direct their communication and offer, they should learn enough about their potential consumers.

3. Conducted survey and the results

Data for this study were collected through a questionnaire survey, and the respondents in the sample were selected by the principle of a simple random sample. The survey covered a total of 105 inhabitants of Osijek-Baranya County, of which 37.5% were male and 62.5% female, 1.9% of respondents were younger than 18 years of age, 16.19% between 18 and 25 years of age, 50.48% between 25 and 40 years of age, 16.19% between 40 and 65 years of age and 15.24% is above 65 years of age.

1.9% of respondents have an average monthly income of less than 3000 kuna, 26.67% have an average monthly income between 2000 and 6000 kuna, 42.86% have an average monthly income of between 6000 and 10000 kuna, and 28.57% have an average monthly income of more than 10000 kuna. 30.77% of respondents live in rural, 46.15% in urban, while 23.08% of the respondents live in suburban areas, 5.71% of the respondents have completed primary school or lower, 4.76% are skilled workers, 21.9% have secondary education, 7.62% are high-skilled workers, 19.05% have a college degree, 35.24% have a university degree, 2.86% have completed specialized study and 2.86% have completed a master's degree or doctorate. 13.33% live in a household with one member, 34.29% in households with two members, 24.76% in households with three members, 17.14% in households with four members and 10.48% in households with more than four members.

The survey respondents were asked, alongside some demographic data (age, gender, number of household members, the average monthly income, level of education, place of residence), about their attitudes on the purchase of food products. For example, the statements: (Q1) If the shop where I usually buy food clearly indicated that certain food products were produced in Osijek-Baranja County, I would decide to buy just these products; (Q2) Sales promotion of food in the shop would encourage me to buy a food product, even if I did not intend to buy it; (Q3) Compared with food products from other counties, products from the Osijek-Baranja County are of much higher quality; (Q4) The freshness of food that I buy is extremely important to me; (Q5) The most important characteristics of the food products I buy is the nutritional value and its impact on health; (Q6) I try to live a healthy life (eat healthily, do sports, etc.); (Q7) I would buy food products from local food producers rather than in the shop if they were more accessible; (Q8) When purchasing food products the most important for me is the price etc. These answers were offered to respondents: 1 - strongly disagree, 2 - slightly disagree, 3 - neither agree nor disagree, 4 - slightly agree, 5 - strongly agree.

Furthermore, for the statements: I buy organically grown food; I buy food products at the same point of sale; I buy food products on the market; I buy food from local producers, offered answers are: never, sometimes, often and always. For questions: How many times have you purchased food products from local producers this year and How many times have you purchased food products at the market this year, these answers were offered: more than

10, 6 - 10, 1 – 5 and 0. To the question "Do you buy or would you buy food products from local producers because of" these answers were offered: freshness of food products, support to local producers, taste of the food, I know how this food is grown, nutritional value and more. For the statement: "Information about quality food products I find" these answers were offered: in brochures of the supermarket chains, in newspaper advertisements, I find them on the internet, the recommendation of acquaintances or family and more.

In order to analyze data, factor analysis with varimax rotation axis with Kaiser normalization factor was applied to the replies on the first eight questions in the survey. Factor analysis examines the interdependence within the large number of variables that tend to be explained by a small number of common factors with minimal loss of information. In the statistical analysis of the data, the statistical package SPSS16.0 was used. First, test of the adequacy of the sample and a test of sphericity was conducted. Kaiser-Meyer-Olkin measure of sampling adequacy was tested. KMO value is an index that indicates whether the factor analysis is appropriate. The value should be greater than 0.5 to factor analysis could be applied, and the results (Table 1) show that this is the case (0.727). Also, Bartlett's test of sphericity was statistically significant, which means that the correlation matrix is non-unitary.

Table 1 KMO and Bartlett's test of sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,727
Bartlett's Test of Sphericity	Approx. Chi-Square	297,786
	Df	28,000
	Sig.	,000

Source: Authors' calculations.

Factor analysis results indicate the existence of three factors. These three factors cumulatively explained 74.69% of the variance. First factor attributed to the 40.92% of the variance, the second factor of 18.79% of the variance while the third factor is attributed to 14.99%. Other factors are insignificant.

Table 2 Rotated Component Matrix.

	Component ^a		
	1	2	3
Q1	,846		
Q2			,881
Q3	,879		
Q4		,50	
Q5		,863	
Q6		,763	
Q7	,834		
Q8			,735
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			

	Component ^a		
	1	2	3
Q1	,846		
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Q3	,879		
Q4		,50	
Q5		,863	
Q6		,763	
Q7	,834		
Q8			,735
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 7 iterations.			

Source: Authors' calculations

Varimax rotation matrix of factors is implemented in order to facilitate the interpretation and understanding of the factors. Variables Q1, Q3 and Q7 belong to the Factor 1 related to accessibility, visibility and quality of food products from the Osijek-Baranja County and the factor is called *factor of accessibility and quality*. Variables Q4, Q5 and Q6 belong to Factor 2 related to freshness, nutritional value and correlation with health and this factor is called *factor of effect on health*. Variables Q2 and Q8 belong to Factor 3 related to sales promotions and food prices, and this factor is called *factor of price*.

In further analysis factors are used as the basis for segmentation of consumers by using cluster analysis (K-means). Results of cluster analysis showed the existence of two clusters or segments of the market. Each individual segment is described in detail using demographic characteristics such as age, gender, level of education, the average monthly income and place of residence.

K-means method showed that an optimal number of clusters is two clusters or two segments of the consumer market. The results of the ANOVA analysis showed that the differences in means in clusters are statistically significant. Means of the factors as well as the results of the ANOVA analysis are shown in Table 3.

Table 3 Means of the factors and ANOVA results.

Variables	Cluster 1	Cluster 2	F-ratio
Factor 1	13.33	8.92	178,526**
Factor 2	13.59	10.79	84,851**
Factor 3	6.37	7.46	9,212**

Note: **significance $p < 0.01$.

Source: Authors' calculations.

Cluster 1 includes 54 or 52.9% of the respondents. Members of this cluster are mostly middle-aged women who have completed college or university and mostly live in the city with higher financial income. Those respondents are equally affected by factor 1 and factor 2 while factor

3 has the least impact. Members of this cluster sometimes buy organically grown food, always at the same point of sale, sometimes at the market, and more than 10 times this year from local producers. Information about the food products they get mostly by recommendations of acquaintances or family, and less frequently in advertisements in newspapers.

Cluster 2 includes 48 or 47.1% of the respondents. Members of this cluster are of different ages and gender, slightly lower financial income, live both in rural and urban areas, and are of different ages. These subjects are most affected by factor 2 while factor 3 impacts the least. Members of this cluster rarely, almost never buy organically grown food. When they do, it is some times in the market, and some times from local producers, less than 5 times this year. Information about food products they obtain from various sides, mostly from the ads in newspapers.

4. Suggestions of marketing solutions

The results of the conducted study point to marketing solutions which could provide better communication with their target market and a more efficient marketing strategy.

Different marketing strategies are to be developed if a producer chooses to address members of the first or the members of the second segment. If one chooses to approach the members of the first segment, one would be able to set a higher price, thus giving an impression of higher quality since the members of this cluster have higher incomes and do not pay much attention to price. Also investing into food quality, possibly obtaining the label of ecological or organic product, might also prove to be important to affect this consumer segment. Maintaining personal relationships and catering to consumer needs indicated by present consumers and potential could affect and create a favourable word-of-mouth which proves to be an important source of information for this segment.

If one chooses the second cluster as his target market, one should communicate nutritional value and healthy benefits one gets from consuming locally produced food. Instead of highlighting the price and using a high price strategy, one should pay more attention to developing the product and distribution channels. The producer should label his product appropriately, thus significating its origin, method of production and nutritional value. Since consumers from this segment prefer buying in shops, local producers should cooperate with local shops and supermarket chains, which should clearly and visibly indicate the producer and its origin. Producers should also consider placing ads in newspapers, possibly alongside with supermarkets that sell their products, since members of this segment mostly rely on information from this source. Ads should include already mentioned information about healthiness of the food products and their origin.

5. Conclusion and suggestions for further study

This paper showed insight into the market for locally produced food in Osijek-Baranya County. The provided information shows preferences and willingness to pay for locally produced food, but also other habits and opinions concerning food buying of inhabitants of this county. The results point to the need for better understanding of the needs of buyers and necessity for adjusting the marketing strategies and actions to different segments of consumers.

In order to deepen understanding of consumers and their local food products buying behaviour, further investigation and research should be conducted. Some interesting questions which could not have been answered in this study arise: do the consumers notice or understand the difference between locally produced, organic or ecologically produced food? What premium would they be willing to pay for locally produced food? Could different segments be found in different populations in Osijek-Baranya County? What are the marketing solutions producers of food from Osijek-Baranya County could apply in reaching consumers from other counties or even foreign markets? The answers to all of these questions could provide a useful basis for developing a marketing and production plan for producers of food products in Osijek-Baranya County thus providing them with a competitive advantage needed for their survival.

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