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ANALYSIS OF THE SLOVAK CONSUMER BEHAVIOUR REGARDING THE ORGANIC FOOD PURCHASE

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Abstract

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The aim of this work was to determine whether Slovak consumers buy organic food, to analyze the frequency of organic food shopping and to examine the monthly expenditure of organic food. Questionnaire survey involved 271 respondents. The hierarchical multiple factor analysis was used for the segregation and classification of consumers into representative groups. The group of respondents was based on algorithms divided into three groups. The first group consists of those respondents who do not buy organic food. In the second group of respondents, prevalent was occasional purchase of organic food. Prevailing monthly expenditure on buying organic food is the amount of 10–15 euros. The third group of respondents does weekly shopping of organic foods, these foods make costs mostly 15 to 20 euros per month.

organic product, shopping behaviour, frequency of shopping, expenses, Slovakia

Food scandals that happened in recent years have increased consumers' risk perceptions of foods and decreased their trust in food safety. A better understanding of the consumer trust in food safety can improve the effectiveness of public policy and allows the development of the best practice in risk communication.

Environmental behavior is manifested as important for producers and consumers as well. The industries are under pressure to use technology more environmentally friendly. Impact of various activities of manufacturing companies on the environment and analysis of their impact on the financial performance was monitored by Horváthová (2012).

Europe's food industry is an attractive sector given the scale and economic activity (Winjands *et al.,* 2006). Agricultural land use and animal performance, as well as the impacts of agricultural production on the environment have been analyzed by Risk-Norja *et al.* (2008) while environmental aspects of food production have been investigated by Usva *et al.* (2009).

Economics of agricultural products producing in rural regions analyzed Fáziková and Stehlíková (2006), innovation performance in this sector was analyzed by Chreneková (2011). Competitive position of the agri-food sector of the Slovak Republic with neighboring countries analyzed Mura (2011) who recommends to agri-business companies to internationalize and penetrate beside western markets of EU mainly to Asian countries, where there is considerable demand for organic food and organic products.

The main goal of organic agriculture is to optimize the health and productivity of dependent communities: soil life, plants, animals and humans (Mulero *et al.,* 2010).

The increasing consumer demand for organic products has led to the development of organic food market in all continents of the world. In Africa, the areas of land farmed organically grow. In countries such as Turkey, Bosnia and Herzegovina, Croatia and some alpine regions organic farming has also developed. The increase rate is special in areas of Latin America. Kováčik and Macák (2007) report

that in most Asian countries organic agriculture is in progress, increasing number of soils is included in the conversion. The world most extensive area is Australia and Oceania.

The market for organic foods is very promising sector. This market gap can be filled by exploring of the consumer buying behavior. Consumption of products that are produced by organic methods, is an indicator of environmental awareness of consumers (Hughner *et al.*, 2007). Spanish market offers organic products, which exports to the EU and then imports them back to Spain from the EU. Austria exports meat and dairy products, but has a significant deficit in fruits, vegetables, soy and cereals. Denmark has been producing organic vegetables and cereals surplus and therefore these products are exported, on the other hand imports wine, fruit, potatoes and pork (Brožová, 2006). New consumerism and trends at the food market monitored Horská *et al.* (2012). Organic food production in China by Shiju (2010) is focused mainly on exports, the domestic market remains relatively small.

As defined in the Act of the National Council of the Slovak Republic No. 152/1995 on food, organic food is food produced from raw materials coming from organic farming – the plant production, which uses special crop rotation, green fertilization, organic manure, mechanical and biological methods of plant protection; and the animal production which uses feed coming exclusively from organic crop production and simultaneously uses special veterinary care.

Currently land area farmed organically in Slovakia represent 9% of the total agricultural land.

The aim of this work was to evaluate slovak respondent opinions on the quality and product assortment of organic foods at the Slovak market, sources of information obtaining about organic food and to analyze the purchasing behavior of consumers, focusing on selected preferences when buying organic foods.

MATERIAL AND METHODS

Consumer opinions about purchase of organic foods, their preferences and shopping behaviors were obtained by using a questionnaire technique. The survey was performed during December 2010 and March 2011. 271 respondents attended, of which 73% were women and 27% men. The questionnaire consisted of 6 questions.

In our survey, respondents participated in the following age structure: category 18 to 30 years is 28% of the respondents, the second age category from 31 to 40 years is 48% of the respondents, the third category of age 41 to 50 years represented 11% of respondents, the fourth category of 51 to 60 years represented 12% respondents, the fifth age group above 61 years is 1% of respondents. By education dominated respondents with secondary education 63%, followed by respondents with a university education 32% and 5% of respondents had the highest basic education.

Agglomerative hierarchical clustering on the contingency tables derived from the dataset by the method of Agnes R (Agglomerative Nesting) has been used to highlight the structure (smilarities of the responses), R Development Core Team (2011). The Hierarchical multiple factor analysis (HMFA), which is a part of a specialized R package for work with questionnaires EnquireR (R Development Core Team 2011) was used for the segregation and classification of consumers into representative groups. The group of respondents was based on algorithms divided into two groups. Fig. 1 and 2 correlatively describe the characteristics.

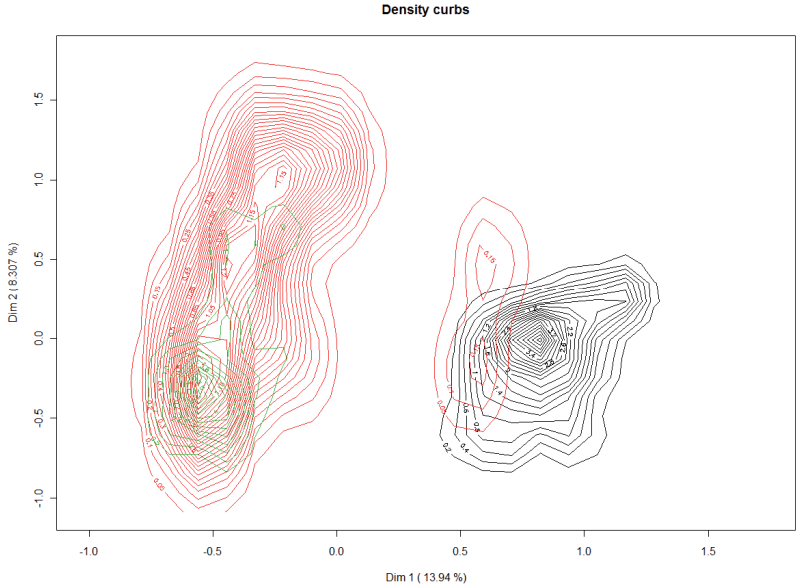
RESULTS AND DISCUSSION

The first Slovak product at the Slovak organic market was spelt flour from Ekotrend Myjava company and in the same year to its offer the organic tea was added. Currently, it is one of the largest producer of organic foods. The highest recorded sales are found in products such as spelt flour, sticks, pasta, tea, as well as dried organic apples. Tatranská dairy company, Inc., is one of the first Slovak producers that follow the trend of a healthy lifestyle and a healthy diet. The reason for the extension of the product portfolio of a number of organic products have been the growing requirements and demands of consumers. Most of the stores offer the Slovak products of flour. That products, which are difficult to process, are still imported, especially from Germany and Italy. Among Slovak products in local stores can be purchased especially pasta, flour, tea, cheese, bread, pastry. Rarity is the only one Slovak producer of wine and mead (Janovíček and Medalová, 2009).

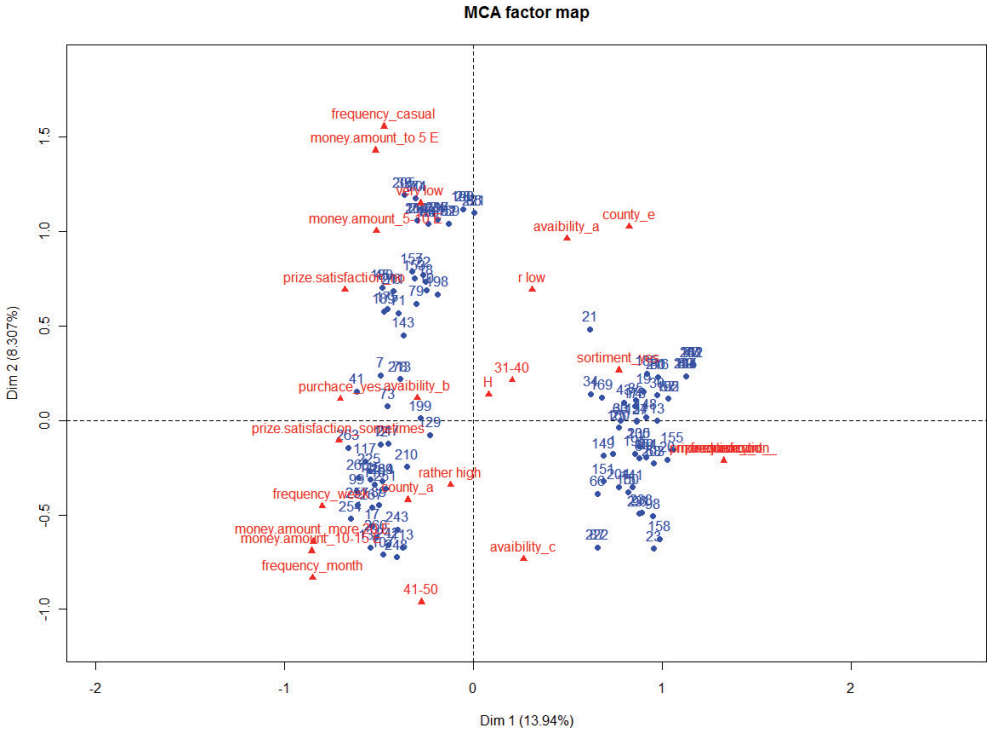
The issue of instrumental sensory analysis of wines is given by Kirsanov *et al.* (2010), Vietoris *et al.* (2010) who consider the differences in the quality of conventional and organic wines as not significant. The main idea came from the production of organic wine-growing trends in consumption of "natural" foods (Akçay *et al.*, 2004). Winemakers who decided to produce such wines must comply with the rules of organic production in accordance with the relevant legislation (Le Guillou and Scharp, 2001). Significant differences in the evaluation of the quality of the resulting wines coming from conventional growing compared to organic ones are not known (Kirsanov *et al.*, 2012; Vietoris *et al.*, 2011).

The decision-making process of consumers buying organic food is influenced by several cultural, social, personal and psychological factors.

One important factor when deciding to buy organic food is the knowledge of the product by customers (Verbeke, 2008). This is confirmed by the analysis of consumer opinions on organic food, which was made by Kozelová *et al.* (2011), Turňová (2011), when examining the knowledge of organic food and buying behavior of consumers.



1: *HMFA categorization of respondents into groups*
Source: Own research and processing

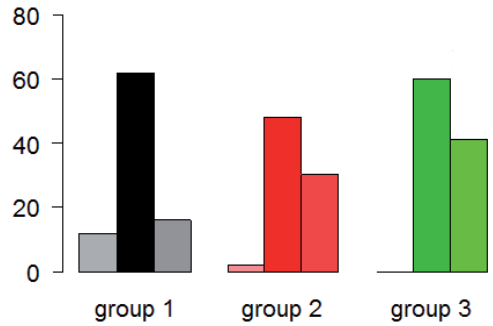


2: *HMFA map of individual respondent positions and response categories*
Source: Own research and processing

Therefore, we monitored source where consumers receive information about organic food. We found that the most frequently used source of information about organic food is for 33% of the respondents internet. One fifth of respondents reported professional journals and books. TV is information source for 16% of respondents, leaflets and brochures 15% of respondents, from newspapers, friends and colleagues take information 8% of respondents.

In all three groups of respondents was prevalent secondary education, while the second and the third group consist of more than a third of respondents with a university education (Fig. 3).

Agro-food enterprises at united European market could succeed only with safe foodstuffs of superior quality. Small and medium enterprises



3: *Structure of respondents by education: 1: basic, 2: secondary, 3: university*
Source: Own research and processing

implement quality management systems, HACCP system, showing to consumers permanent interest of enterprises to work on their quality improvement (Mura and Gašparíková, 2010).

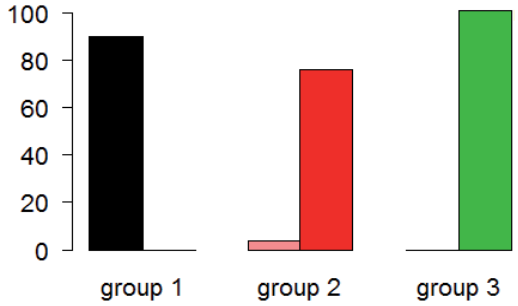
Food safety and the development of an understanding of issues surrounding pathogens associated with food are of considerable importance in modern-day food production. The design and use of risk models to estimate the likelihood of human illness has become an important part of our understanding of food safety issues (Logue and Nodue, 2007).

Research of products and origin of organic foods offered at the Slovak market in three retail chains and specialized stores performed Abrhan (2011). Most of organic food came from the countries of the European Union (98%). Outside the EU, the stores with organic products have only coffee and bananas from Ecuador. The largest share of the market was for the Czech Republic (28%), followed by Italy (24%), Slovakia (22%), Germany and Poland consistently with an 8% share. The Czech Republic had the largest portion (beef, ketchup, pasta, rice and spelt breads, oatmeal, flaxseed oil, teas). The total area of ecologically farmed areas in the Czech Republic permanently increases, however the offer of organic food is insufficient, in particular in view of their structure. Deficiency in organic food is being solved by imports. Distributors play an important role in the organic food market (Živělová and Crhová, 2013).

Pesticide residues in organic food should be much lower than in conventional production (Kozelová *et al.*, 2011). Demand for organic vegetables analyzed Oplanic *et al.* (2009) and indicate that tourists from developed countries visiting Croatia, require vegetables grown in organic agriculture. Research results show that 70% of surveyed tourists want to consume organically produced food and are willing to pay for them cost about 10 to 50% higher than for products from conventional agriculture.

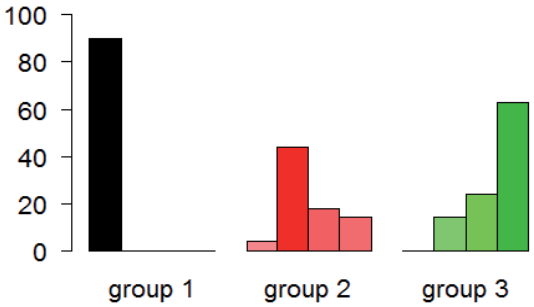
Pieniak *et al.* (2010) suggest that consumption of organic vegetables has increased significantly and organic fruits and vegetables make up a significant proportion of the consumption of organic food. Fruits and vegetables from organic farming are usually the first in which consumers have the experience to purchase and use. The market with the fruit and its production economically analyzed Gurčík *et al.* (2007).

We were interested in our study whether respondents buy organic food. Among 271 respondents, 65% of them buy organic food and 35% of organic food do not purchase. The first group consists of those respondents who do not buy organic food, in the second and third group dominates buying of organic food (Fig. 4).



4: *Barplot of question: Do you buy organic foods? 1: no, 2: yes*
Source: Own research and processing

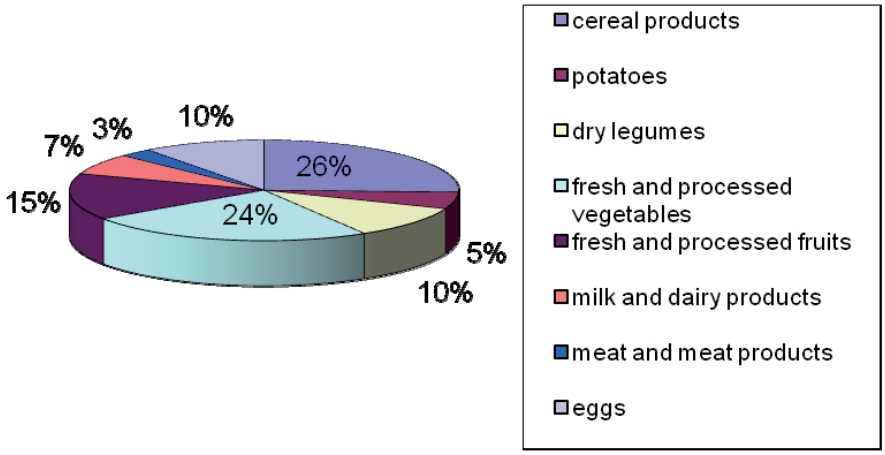
Overall, the respondents weekly do shopping of organic food. Up to 43% of the respondents buy organic food once or twice a week, 33% occasionally and 24% of them once to twice per month. We found that the first group of respondents do not buy organic food, casual shopping dominated in the second group and in the third group predominant is shopping weekly (Fig. 5).



5: *Barplot of question: The frequency of organic food buying: 1: no purchase, 2: casual, 3: monthly, 4: weekly*
Source: Own research and processing

The frequency of organic food purchase Mališová (2008) also observed. She states that 25.28% of respondents buy organic products once a week, nearly 37% of respondents once a month, 12% of respondents every quarter and more than 25% of respondents state that they purchased only once per half a year.

Environmental education in the family since childhood and the opinions of friends significantly



6: *Structure of organic food groups bought*
Source: Own research and processing

influence consumers when buying food and organic food. According to Lamb *et al.* (2009) social factors influencing buying behavior are external influences such as the reference group, or family. Their views on consumer food choices are processed and subsequently lead to the decision to buy a particular product.

In the structure of purchased organic food at the Slovak market respondents prefer cereal products (26%), fresh and processed vegetables (24%), fresh and processed fruits (15%). Followed by 10% of dried legumes and eggs also 10%, 7% of respondents buy milk and dairy products, potatoes 5%, 3% meat and meat products (Fig. 6).

In connection with maintaining the quality of food products, consumer preferences are changing and consumer perceptions of packaging materials as well. These changes have led to innovation and to the development of new packaging Technologies (Pavelková and Flimelová, 2012; Čapla *et al.*, 2013).

The research of O'Donovan and McCarthy (2002) showed that consumers consider organic meat to be better compared to conventional meat in terms of quality, safety, labeling, production methods, and nutritional value.

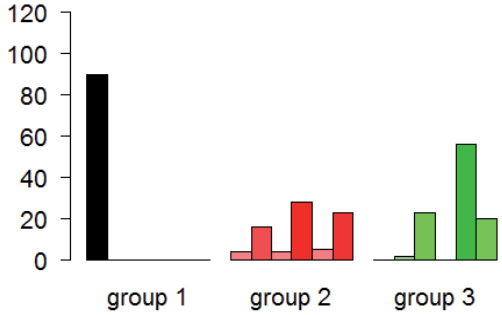
We also analyzed the motives or reasons of buying organic food. 42% of respondents reported that the main motive for buying organic food is a concern for the environment and landscape, 33% of respondents state it is a pleasure and the opportunity to try something unusual, 11% reported confidence in the quality of organic food and 7% their health care.

The behavior of consumers, motivating factors and barriers for organic food purchasing decisions were reviewed by several authors. Zentková and Hošková (2009), Matejková and Poláková (2008) state that the development expenditure of households in the Slovak Republic follows the development of their income and almost all of their incomes are consumed in a given year. Consumer demand is shifting towards higher prices for better food processing. A high proportion of household expenditure on food in Slovakia is limiting households to decide on the size and structure of food consumption (Kubicová *et al.*, 2012).

In Visegrad countries high proportion of household expenditure (approx. 20%) on food and soft drinks was observed. Similarities, respectively differences in consumer behavior and structure of household expenditure at the time of economic crisis in the years 2007 to 2009 analyzed Skálová and Stávková (2012).

By the examination of the monthly expenditure on organic food, we found that the first group of respondents does not buy organic food, the second group is dominated by monthly expenditure of 10 to 15 euros, and in the third group respondents spend for the organic foods cost approx. 15 to 20 euros per month (Fig. 7).

The highest consumption of organic food in Europe is found to be in Switzerland recorded with 105 euros per capita, in the Kingdom of Denmark with 97 euros per capita, who also indicate a high popularity of eco-labels. Organic food consumption per capita in Austria is € 89 and Germany at 66 per year. In Germany, for years is carried a state campaign to inform residents about the quality of organic production. The promotion



7: *Barplot of question: "How much do you spend to buy organic food per month?"*
1: no purchase, 2: up to 5 €, 3: from 5 to 10 €, 4: from 10 to 15 €, 5: from 15 to 20 €, 6: above 20 €
Source: Own research and processing

of organic farming was significantly activated in France. Austrian consumers meet their demand for organic products in a lot of organic supermakets (Schloserrová, 2009).

More than 80% of the organic production of the EU is consumed in Germany, Great Britain, France and Italy, at an average annual increase of 18.1%, which was sawn in France from 2005 to 2009. Austria leads the menu of organic food in supermarkets (Agra Europe, 2010).

Organic food will be processed minimally in the future. The specific taste and traditional regional specialities will be more appreciated (Rural Europe, 2009).

Analyzes of the structure of organic food consumers by gender show that men are more willing to pay higher prices for organic food than women (Ureňa *et al.,* 2008). Several analyzes show that organic foods are mostly bought by higher education consumers (Aguirre, 2007). O'Donovan and McCharthy (2002) report that organic foods are prefered more by middle and upper income levels.

The interesting results found Kolačkovská (2012), with 317 views of Slovak consumers aimed at organic nutrition of children examined whether there are differences between the two groups of respondents, a group that has and a group that does not have pre-school aged children in their household. In the group, which has a pre-school age children in households they consume four times more organic. In the group, which consisted of no pre-school age children, up to 28% no organic food was consumed. Respondents who have preschool children at home and have a lower monthly income are even so willing to respect the needs of children and to buy organic food and to introduce them at home.

Adequate organic food label gives consumers information not only about the food eaten environmentally friendly, but also serves to distinguish organic food from other foods. It also guarantees that the product is manufactured in accordance with relevant legislation and regulations. Opinion survey of 388 respondents in Slovakia by Kozelová *et al.* (2011) showed that organic food from a particular brand or a particular manufacturer is looking for 5% of respondents and the logos are mostly known for them.

CONCLUSION

Survey of consumer opinions offered at the Slovak market with organic products shows that all respondents know the term "organic", but only 65% respondents purchases organic food. The most frequently are bought cereal products, fresh and processed fruits and vegetables. The least purchased are organic foods such as meat and meat products. Most respondents buy organic food because of environmental reasons and enjoyment, the opportunity to try something new.

By analyzing the behavior of Slovak Consumers at the market for organic products were created three groups of respondents. The first group consists of those respondents who do not buy organic food. For these respondents organic food assortment at the Slovak market is not sufficient and organic foods are not available for all of them. In the second group of respondents is prevalent occasional buying of organic food. Prevailing monthly costs for organic food are from 10 to 15 euros. In the third group of respondents dominates weekly shopping of organic food. Costs of organic foods make mostly 15 to 20 euros per month. In all three groups of respondents generated, prevalent was secondary education, while the second and the third group consists of more than a third of respondents with a university education.

SUMMARY

Organic foods represent a specific segment of the food market. In this work we examined a number of Slovak consumers who buy organic food, we examined their motives to purchase organic food, structure of organic foods bought, then we analyzed the frequency of organic food buying and the monthly expenditure.

In the survey participated 271 respondents, 65% of them buy organic food and 35% does not purchase it. The first group consists of those respondents who do not buy organic food, in the second and third group dominates buying of organic food. In the second group of respondents is prevalent occasional buying of organic food. Prevailing are monthly costs for organic food from 10 to 15 euros. In the third group of respondents dominates weekly shopping of organic food, costs of organic foods make mostly 15 to 20 euros per month.

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