

THE POPULARITY OF BIO PRODUCTS AMONG YOUNG PEOPLE IN THE CZECH REPUBLIC

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Abstract

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Organic farming and foods, which have been very promisingly evolving over the recent years, are areas of economy that are not only of interest for farmers themselves but also for economists. Recent trends in this sector indicate an ongoing increase in the demand for organic production. The first part of this paper is devoted to introducing the concept of organic farming and gathering all the factors influencing the consumer's decisions in purchasing organic products. Based on these findings, a marketing research has been carried out. The aim of this research is to identify different shopping patterns among young males and females in the Czech Republic concerning organic products and new upcoming trends in this area. In the second part of this paper, the results of this research are summed up and used to give advice to producers and merchants of organic production on improving their marketing strategies.

organic products, organic farming, shopping patterns, statistical data processing

Living an organic life has been a challenge in the neighbouring western countries for many years. Although in this country this is not yet so, recently, there has been a sharp increase in the interest in healthy foods and organic products.

You might think that organic life-style was only enthused by a small group of people for whom the return to a natural way of life has become the foremost goal of their lives. Luckily, this is nothing but a long-lived dogma. An increasingly large number of people enjoy organic lifestyle also thanks to farmers' markets. The reason is simple; we have begun to think about what we eat and how we live.

1 Research objectives

First, this paper aims to collect facts about organic farming and foods, to explain and analyze them clearly. Next, a marketing research will be conducted of the organic-product market in the Czech Republic. The results will then be processed using statistical methods and procedures. The paper's main objective is, based on the results obtained, to set up marketing strategies for advertising, with young people (16 to 25 years of age) being the key

target group. Next, statistical analysis will be used to make recommendations to the producers of and merchants with organic products on how to enhance the appeal of these products to increase their sales.

2 Organic farming and foods

Organic farming has a long tradition and history. Already at the beginning of the last century, some great European thinkers such as Rudolf Steiner considered use of artificial fertilizers unnatural and harmful. This is how the movement of organic farmers was created, which subsequently spread all over the world.

Organic farming respects the natural cycles and relationships to produce foods of high quality and value. Its priority is quality, not quantity of production. It is based on the principles of more ethical approach to the animals bred, environment protection, saving of non-renewable energy resources, protection of population health as well as preserving farming jobs and maintaining biodiversity. It is one of the tools of sustainable development and, since 1994, it has been part of the EU farming policy.

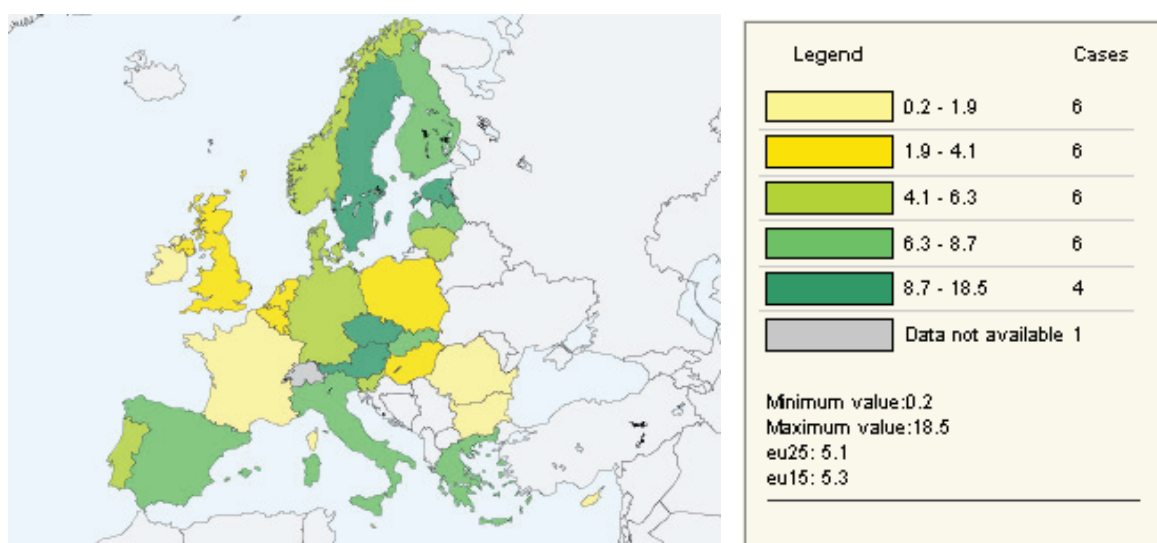
Organic foods are the products of organic farming and have been gaining popularity with the consumers all over the world. They form one of the most rapidly developing segments of the food market.

Thus, organic food is made from plants, animals, and their products, grown, bred, and processed in accordance with Act No. 242/2000 Coll. concerning organic farming and Council Regulation (EEC) No. 2092/91. Organic foodstuff must of course comply with all the safety and health regulations stipulated by Act No. 110/1997, Coll. on Foodstuffs and Tobacco Products.

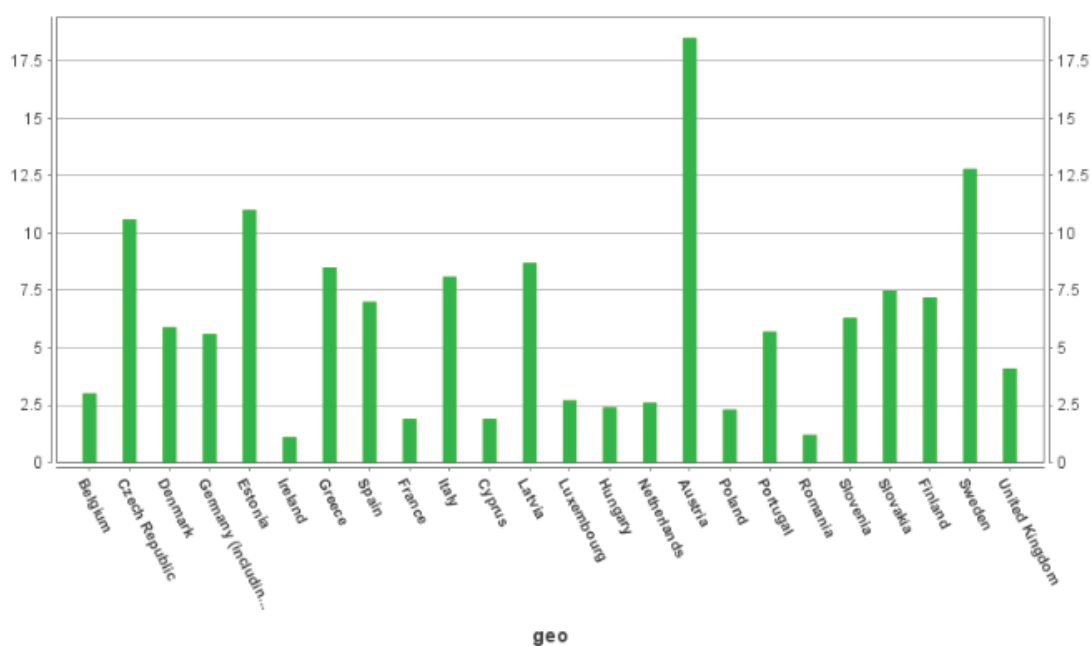
2.1 Czech Republic and its relationship to organic farming

In the Czech Republic, the development of organic farming was only made possible by the democratic changes after 1989. Now the Czech Republic is among the first of the new EU countries being in a foremost position in terms of the area of organically cultivated land.

Figure 1 shows the situation in 2009 in the geographic positions of selected countries. Countries organically cultivating less than 1.9% of the total land area are highlighted in ochre. These include France, Ireland, and Rumania. Another group of countries organically cultivating about



1: Percentages of organically cultivated land of the total land area in selected EU countries in 2009, Source: [EUROSTAT]



2: Percentage of organically cultivated land of the total land area in a selected EU country in 2009, Source: [EUROSTAT]

2 to 4.1% of land includes England, Belgium, the Netherlands, and Poland. The next group with organic farming on about 4.2 to 6.3% of the total land area includes countries such Germany, Portugal, and other countries. The group of countries organically cultivating about 6.4 to 8.7% of the total land area, including Spain, Italy, Finland, Slovakia, and Greece is particularly numerous. More than 8.8% of the land is cultivated organically in Austria, Sweden, and Estonia including the Czech Republic.

From figure 2, it is clear that the Czech Republic is really among the few countries cultivating land organically in a great proportion of more than 10% of the total land area. The above data are from 2009.

3 Research results

A total of 1,122 respondents participated in an enquiry in the Czech Republic. Questionnaires were distributed via ReLa¹ to respondents to be filled in and submitted in electronic form. The data was collected in the second quarter of 2011. More women than men participated in the enquiry. The age of a typical respondent was between 16 and 35 years. Concerning the respondents' education, these were mostly university students. Thus, the sample was actually not representative of the whole population. However, since the recommendations are supposed to concern the group of people who are the best potential organic food buyers a sample in which young people prevail, seems to be suitable.

In the enquiry, the respondents were, among others, asked about the sizes of their households and about their incomes for us to be able to confirm or reject the hypothesis that the per capita income affects the amount of organic foods bought. In most cases, organic foodstuffs are more expensive than the ordinary ones and so the income could be a significant factor in buying organic food. The most frequently mentioned monthly incomes per household were between 20,000 and 40,000 CZK with the respondents living mostly in four-member households. A majority of the respondents live in a town with a population greater than 200,000.

When buying organic foods, the respondents prefer quality and price with appearance being an important factor, too. Availability and place of origin are given less attention with the product mark having the least importance.

About 70% of the respondents buy organic foods often or occasionally. The remaining 30% do not buy organic foods at all or do not care whether a product they buy is organic. Of these respondents, a part is not satisfied with their higher price while another part think that there is no point in buying organic products. Other open answers imply that the respondents do not trust the shops with selling real organic foods.

Those buying organic foods do this mostly because they are convinced that they are healthier and tastier. They do their organic shopping mostly in hypermarkets and supermarkets and very often go to specialized shops. There is also a large group of respondents who grow their own organic food.

Although the respondents believe that organic food is healthier and tastier, a relatively large part of them do not think that it is more enticing. Only 27% of the respondents believe that the quality of organic products is markedly better than that of the classical food. A surprising 45% of them are convinced that, in some aspects, organic foods are better and in some worse.

Most of the respondents are willing to put up with their higher price considering a 10-percent higher price acceptable. If the respondents' favourite shops do not offer organic foods, they would welcome this in the future.

A large number of the respondents think that organic food is well distinguished in their favourite shop, but there is also a rather large group (22%) of those who do not think so at all. In the organic product range bought by the respondents, products of domestic origin prevail. If asked to estimate how much they spend on organic foods in a month, most of the respondents checked the answer of less than 500 CZK.

There is about the same number of those that think that organic foods are well advertised and those that do not. This means that there are a huge number of people thinking that organic foods are not sufficiently promoted.

Next, it is clear from the questionnaires that more than a half of the respondents do not care about organic farming. They admitted, however, knowing a little of such issues. Only about six percent take keen interest in organic farming, which is alarming. However, most of the respondents believe that interest in organic foods is going to increase in the Czech Republic.

When asked in an open question to give a definition of an organic food, the respondents provided us with many interesting observations. In this question, the Czechs proved that they know what an organic food is being able to define it and having a clear understanding of what the difference is between organic and classical foods. There are, however, some who distrust organic foods doubting their superior quality and the way they are grown without artificial fertilizers, harmful chemical spraying, or genetically modified organisms and GMO-based products.

1 ReLa – Research Laboratory; Virtual Laboratory for the collection and evaluation of primary data query report is an environment for supporting the creation and communication of scientific researchers in the field of e-research.

4 Multistage sorting and hypothesis testing

The following working hypotheses were formulated for the research:

- Women buy organic foods more often than men.
- Women are convinced that organic foods are healthier.
- Women buy organic foods more often than men in specialized shops.
- Young people care more about buying organic foods.

The first hypothesis means that we believe that women in the Czech Republic buy organic foods more often than men. Using multistage-sorting, we will investigate the relationship between the answers to the questions: *Do you buy organic foods?* and *The respondents' gender*.

From table I, it is clear that women do buy organic foods sometimes and regularly in more cases than men do. There are 362 (46%) women buying organic foods regularly as compared to 122 (38%) men. This is actually a logical conclusion since, in the Czech Republic in general, women do more shopping than men.

Using the Pearson chi-square test of independence, we tested how the frequency of buying organic food depends on the respondents' gender. The resulting value of this test was $\chi^2 = 7.589538$ with at a 0.05 significance level (p-value 0.05). This means that, with a five-percent-risk, we do not reject the hypothesis of the organic-food-buying frequency being independent of the gender. Thus, our working hypothesis about organic food being more favoured by women was rejected by the chi-square test.

Under the next hypothesis, the conviction that organic foods are healthier depends on the respondent's gender. Using multistage sorting again, we will investigate the relationship between answers to the questions: *Do you think (believe) that organic foods are healthier.* and *Respondents' gender*.

A total of 617 (78.7%) female respondents answered Definitely yes and Rather yes as compared with 218 (69.4%) male respondents see table II. Thus, one can conclude that women are really more convinced that organic food is healthier. By a goodness-of-fit test for relative frequencies, this could be confirmed. The test corroborated a significant difference between the female and male frequencies ($U = 3.253$ with p-value less than 0.001).

The next idea rests on a hypothesis that women buy organic foods mostly in specialised shops than men. Again, using multistage sorting, we will

II: *Multistage sorting: Do you think (believe) that organic food is healthier depending on the respondent's gender*

Frequency	Women	Men	Row total
Definitely yes.	142.0000	46.0000	188.0000
Rather yes.	475.0000	172.0000	647.0000
Don't know.	53.0000	21.0000	74.0000
Rather not.	109.0000	70.0000	179.0000
Definitely not.	5.0000	5.0000	10.0000
Column total	784.0000	314.0000	1 098.0000

investigate the relationship between answers to the questions: *Where do you regularly buy organic foods? (alternative – specialized shop)* and *Respondents' gender*.

III: *Multistage sorting: Where do you regularly buy organic foods? (alternative – specialized shop) depending on the respondent's gender*

Frequency	Yes	No	Row total
Women	192.0000	597.0000	789.0000
Men	42.0000	277.0000	319.0000
Column total	234.0000	874.0000	1 108.0000

From table III, it is clear that there are 192 (24.3%) women and only 42 (13.1%) men buying in specialized shops.

By a goodness-of-fit test for relative frequencies, this could be confirmed. The test corroborated a significant difference between the female and male frequencies ($U = 4.11$ with p-value less than 0.001). Women like to buy in specialized shops more than men.

The last hypothesis tries to find out whether young people care more about buying organic foods. We will use the last contingency table to investigate the relationship between the answers to the questions: *Do you buy organic foods?* and *Respondent's age*.

In table IV, one can see that, out of the total number of young respondents 1,113 between 16 and 35 years of age, there are 423 (41.8%) who buy organic foods regularly a sometimes. Out of the 101 older respondents between 36 and 65 years of age, there are 63 (62.4%) who buy organic food regularly and sometimes.

Applying the Pearson chi-square test ($\chi^2 = 79.80234$, p-value less than 0,001) a highly significant dependence was discovered between the frequency of organic-food shopping and the respondents' age. Thus, different shopping frequencies were proved for respondents of different ages.

I: *Multistage sorting: Do you buy organic foods depending on the respondent's gender*

Frequency	Women	Men	Row total
Yes, regularly.	33.0000	12.0000	45.0000
Yes, sometimes.	329.0000	110.0000	439.0000
I don't know whether what I buy is organic.	182.0000	96.0000	278.0000
No, never.	244.0000	101.0000	345.0000
Column total	788.0000	319.0000	1 107.0000

IV: Multistage sorting: Do you buy organic foods related to the respondent's age

Frequency	Yes, sometimes.	I don't know whether the foods are organic.	Yes, regularly.	No, never.	Row total
16–25	332.0000	235.0000	14.0000	299.0000	880.0000
26–35	62.0000	26.0000	15.0000	30.0000	133.0000
36–45	27.0000	9.0000	9.0000	10.0000	55.0000
46–55	15.0000	3.0000	4.0000	9.0000	31.0000
56–65	6.0000	6.0000	2.0000	0.0000	14.0000
Column total	442.0000	279.0000	44.0000	348.0000	1 113.0000

DISCUSSION AND CONCLUSION

The aim of this paper was, based on an enquiry and working hypotheses formulated, to give advice to organic product manufacturers and merchants on how to enhance the appeal of this product group to increase their sales.

First, we would like to point out the distrust of organic foods in a rather large number of respondents. This may be concluded from the many reactions in the open questions of the enquiry. Thus, it is necessary to make the customers more aware of the organic food's superior quality. Their trust must be won, which may be done by better informing them on the quality tests made. Next, it should be pointed out that it does make sense to buy organic foods. Advantages and of organic foods should be emphasized pointing out disadvantages of classical foods containing, among others, harmful chemical additives known as E-number additives. Therefore, we recommend healthier nutrition promotion campaigns to support the idea that there is a point in buying organic foods.

The customers need to be enticed because, according to the enquiry, organic foods have an insufficient appeal for the respondents. Also, if the respondents did buy organic foods, they said they would not spend more than 500 CZK per month for organic foods, which is really a small amount. It is thus clear that, in this sector, advertising is much underestimated. Even about 50% of the respondents believe that organic foods receive insufficient promotion. Advertising spots can hardly be seen anywhere - television, magazines, or billboards. Here, changes must necessarily be undertaken to inform the customers through advertising about the superior quality of organic

foods and the related advantages. It is also clear that organic products are not enticing for the customers so that we recommend giving a serious thought to their packaging. Even a well designed coloured wrapping may attract attention to increase sales. We recommend highlighting organic products more marking them off from the classical foods by their packaging.

We would focus the advertising on emphasizing the strengths of organic foods targeting it mostly on women, who are the most frequent shoppers in the Czech Republic. Next, it is necessary to attract the attention of those respondents who do not take notice whether they buy organic or classical products since they are not aware of the advantages and qualities of organic products.

Also, sample tastings would no doubt attract customers informing them on the food quality and the quality tests performed. Thus, personal experience of organic foods is our next recommendation. Such tastings would best be held in hypermarkets and supermarkets where the respondents shop mostly.

The price of organic foods is certainly another factor. From the data collected, it is clear that the respondents are willing to accept a price that is about 10% higher than that of the classical foods, but as mentioned above, they spend on organic foods less than 500 CZK in a month. Thus, we recommend starting with action prices of organic foods first to increase profit. In this way, one could attract the customers believing that they will become interested in organic products and willing to pay more in the future and, moreover, will be buying them more frequently, having been convinced by their previous good experience.

SUMMARY

In the first place, the paper aimed to collect facts about organic farming and foods, to explain and analyze them clearly. Next, using statistical methods were used to analyze the data from a marketing research and characterize the differences in the buying patterns of young men and women. The statistical analysis would be then used to make recommendations to the producers of and merchants with organic products on how to enhance the appeal of these products to increase their sales.

The enquiry included 1,122 respondents with women being more in number. These were mostly young people, which should be the target group of marketing strategies. The reason is that it is these people who are the potential buyers of organic products in the years to come.

The research has shown that of the respondents not buying organic foods, a part is not satisfied with their high price and another part think that there is no point in buying them. Other open answers imply that the respondents do not trust the shops with selling real organic foods.

Twenty-seven percent of the respondents think that the quality of organic products is substantially higher than that of the classical foods. And about 45% are convinced that, in some aspects, organic foods are better and in some worse than the classical foods.

Only about 40% of the Czech respondents believe that organic foods receive sufficient promotion. Thus, there is a considerable number of those who think that organic products do not receive sufficient promotion.

Several working hypotheses were formulated for this paper. The hypothesis that organic foods are more popular with women was rejected by a chi-square test. Despite this, one might think that women buy more organic foods than men.

According to the second hypothesis, it may be concluded that women are more convinced about organic foods being healthier. The third idea was based on a surmise that women buy organic foods mostly in specialized shops. The goodness-of-fit test for relative frequencies corroborated a significant difference between the female and male. So women really like to buy in specialized shops more than men.

REFERENCES

- FORET, M., 2003: *Marketingová komunikace*. 1st ed. Brno: Computer Press, 275 p., ISBN 80-7226-811-2.
- FORET, M., STÁVKOVÁ, J., 2003: *Marketingový výzkum – Jak poznávat své zákazníky*. 1st ed. Praha: Grada Publishing, a. s., 160 p., ISBN 80-247-0385-83.
- HINDLS, R., 2003: *Statistika pro ekonomy*. 3rd compl. ed. Praha: Professional Publishing, 415 p., ISBN 80-86419-34-7.
- MAREK, L. et al., 2007: *Statistika pro ekonomy – aplikace*. 2nd ed. Praha: Professional Publishing, 485 p., ISBN 978-80-86946-40-5.
- PŘIBOVÁ, M., 1996: *Marketingový výzkum v praxi*. Praha: Grada Publishing, 238 p., ISBN 80-7169-299-9.
- ZBOŘIL, K., 1998: *Marketingový výzkum*. 1st ed. Praha: VŠE, 107 p., ISBN 80-7079-389-9.
- Association of private farming in Czech Republic. *Situace ekologického zemědělství členských států EU v číslech*. [online]. Last revision 2011 [cit. 26. 10. 2011]. <<http://www.asz.cz/cs/zpravy-z-tisku/ekologicke-zemedelstvi/situace-ekologickeho-zemedelstvi-clenskych-statuu-eu-25-v-cislech.html>>
- EUROSTAT. *Area under organic farming %*. [online]. Last revision 11. 3. 2011 [cit. 10. 10. 2011]. <<http://epp.eurostat.ec.europa.eu/tgm/mapToolClosed.do?tab=map&init=1&plugin=0&language=en&pcode=tsdpc440&toolbox=legend>>.
- European Commission, development of land and farming. *Ekologické zemědělství*. [online]. Last revision 2011 [cit. 29. 10. 2011]. <http://ec.europa.eu/agriculture/organic/home_cs>
- Global organic statistics and news. *Organic Agricultural Land*. [online]. Last revision 3. 3. 2011 [cit. 19. 10. 2011]. <<http://www.organic-world.net/statistics-europe-production.html>>.
- Ministry of Agriculture. *Bio – rozmanitost každým kouskem*. [online]. Last revision 2010 [cit. 18. 10. 2011]. <<http://eagri.cz/public/web/mesic-biopotravin>>
- Institute of Agricultural Economics and Information. *Ekologické zemědělství*. [online]. Last revision 2011. [cit. 23. 10. 2011]. <<http://www.agronavigator.cz/ekozem/>>.

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