

ЕКОНОМІКА ТА УПРАВЛІННЯ ПІДПРИЄМСТВАМИ (ЗА ВИДАМИ ЕКОНОМІЧНОЇ ДІЯЛЬНОСТІ)

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MARKET ORGANIC FOOD ATTRIBUTES DETERMINING CONSUMER CHOICES

Abstract. The aim of the research was to identify the factors influencing consumption of organic food. In our research an attempt was made to find a method for identifying organic food and assessing the features ascribed to it by consumers. These features were then analyzed in terms of their market attributes. The paper presents results of research conducted in 2005, 2010 and 2013 on the organic food market with special emphasis placed on pricing, distribution systems and consumers in the north-eastern Poland. Respondents' answers indicate their increasing interest, knowledge and commitment to the environment. Market attributes include the food's high nutritious value and naturalness, the producer's logo and price. Consumers buying organic food believe that the production and processing of food does not destroy the natural environment. Emphasizing the health and taste attributes of organic food is not enough, however, and it has to coincide with the consumer's behavior and pro-environmental bias, which become explicit in his choice of food.

Key words. Organic food, consumer behaviors, the attributes of organic food.

Introduction. The dynamically growing organic food market needs to implement such marketing tools that take into consideration the specific characteristics of this market. In order to create a competitive advantage of the product offer, the concept of ecological attributes of the food is introduced (product features which fulfill consumers' needs).

The organic food has features which can be divided into individual attributes – personal (private) and social attributes – environmental (public). The group of individual features perceived by consumers of organic food consists of such characteristics as taste, health value, freshness [Misra, Huang and Otto 1991] or utility value of these products [Zanoli and Naspetti 2002]. The features of the product described as individual attributes (private) are valued because of different, sometimes egoistic, reasons imposed by the consumers' and their families' needs [Grzybowska-Brzezińska 2008]. The social attributes of organic food include

aspects of the environmental protection or respecting the well-being of animals in organic farming, both of which are considered non-utilitarian characteristics, and the fact that they are perceived by consumers results from their altruism determining their behavior [Łuczka – Bakula 2007]. This means that organic food is seen in a wider context of the natural environment, its state and its relation to agricultural production methods and health [Newerli – Guz and Śmiechowska 2004] which may result from consumers' environmental awareness, more aggressive promotion of health, social marketing of companies, consumers' and producers' civic virtue. All these aspects add to the image of organic food and, indirectly, their consumers and producers.

Another take on the characteristics of the process of selecting food products by the target market involves a phenomenon in which the shaping of consumer preferences is influenced by the food product attributes, grouped in three

categories [Wierenga 1983] and defined as sensory, instrumental or symbolic, which may be located in particular layers of a product (outside and inside). The first defined group of sensory attributes involves the physical features such as taste, smell, colour and appearance [Wierenga 1983; Peattie 1995; Grzybowska-Brzezińska 2013]. Functional (also: instrumental) attributes are features which fulfill consumers' physiological needs, such as supply energy, help build and maintain in good condition cells and body organs. The composition, presence of certain nutrients (carbohydrates, proteins, vitamins), type of ingredients, presence or absence of preservatives or additives are all part of this group of attributes. The features of a product related to its utilitarian value, like the size of packaging, easy preparation, preservation method may also be classified as functional attributes [Grzybowska-Brzezińska 2013; Wierenga 1983].

Consumer behavioral conditioning related to the organic food market should also be seen through the filter of their awareness and knowledge about organic food. The market behavior of a socially-aware customer involves conscious choices which require some knowledge about rival products. Awareness and knowledge have a direct and indirect influence on the attitudes towards consumer goods and readiness to pay a certain price for them. Organic products are among those which evoke much trust in consumers, especially when it comes to the production technologies (as opposed to manufacturers who know that their products is organic). Buying and using such products (even more than once) consumers are unable to verify whether the way in which they were produced was ecological or not. The verification and identification of the organic food production technology is only possible after receiving reliable information, for example the logo of the producer or certifying authorities, or the composition of the product. Thus, the social awareness and knowledge of organic food characteristics, brand trust and the trust in the place of manufacture have a key significance in consumer decisions [Grzybowska-Brzezińska and Rudzewicz 2015].

The aim of our research is to identify organic food qualities in the context of market and technological attributes and define the determiners shaping market behaviour of organic food consumers in the particular parts of the carried-out research.

Materials and methods

The subject of interest is organic food understood as food with a Polish or European organic food and organic farming certificates. The research was conducted in selected cities of north-east Poland in 2005, 2010 and 2013, each time in the spring, March through April. We used a structured direct survey method based on a drawn-up questionnaire. To prepare the research tools we used nominal, ordinal and Likert scales. For data collection the PAPI (Paper and Pencil Interview) method was used, in which pollsters interview respondents and noted their answers on printed-out questionnaires. The sampling was intentional and it took into account the representativeness of respondents' indicated age groups, education and number in the particular years of study. In 2005 the number of analyzed questionnaires was 825, in 2010, 971 questionnaires and in 2013, 1205, where 65% of respondents were from the Warmian-Mazurian Voivodship. In each of those three periods 1500 respondents were interviewed but the analysis was based on questionnaires verified positively in terms of the extent of the organic food awareness and the completeness of the filled in questionnaires. In all the consecutive periods of research the number of respondents as well as regular organic food consumers was higher than in the preceding one. The respondents between 21 and 50 years of age and with secondary or higher education formed the biggest groups amongst interviewees. The respondents were mostly city dwellers and members of one- or two- children families.

Experiment results and discussion

Perception of market attributes of organic food in consumers' choices.

Studies concerning consumers' awareness and knowledge of the features of organic food show that although there is awareness all over the world on the regulations of organic food, consumers (sometimes in the same country)

differ in their interpretation of the term „organic.” Many consumers of organic food recognize such products through the labels or logos. [Øystein, Persillet and Sylvander 2001; Chang and Kinnucan 1991; Mathios 1998]. Sensory attributes and food safety definitely influences the choices of organic food consumers and also attractive appearance and convenient both use and purchase were further important determinants of target markets' behavior for naturally made products. For market attributes the following were considered: purchase location and accessibility, price level, exhibition in shop, brand trust, environmentally friendly and both promotion

and advertising [Grzybowska-Brzezińska 2013].

Taking into account the acceptance of certain qualities of organic food, particular attributes were evaluated. Respondents rated (from 1 – completely unimportant to 5 – very important) individual qualities considered to be technological and market attributes. Table 1 presents the rating structure in which 5 is very important for each quality in the individual years of the study. Concerning such market attributes as shorter shelf-life, an aspect of environmentally friendly production, respondents judged that the production of organic food does not harm the environment and is available in supermarkets and hypermarkets.

Table 1. Market attributes of organic food as perceived by respondents (%)

Attributes	2005	2010	2013
	answers (%)		
shorter durability	45	25	19
manufactured in clean environment	41	43	29
health benefits	75	78	79
manufacturer does not pollute environment	22	34	45
available in supermarkets and hypermarkets	15	25	45
wide assortment	8	11	25
high price	69	56	67
packaging contains the organic food producer's logo	58	67	78
easy to prepare	23	34	56

Source: own research

Having analyzed the market attributes it becomes apparent that the health benefits resulting from consuming organic food is of essential importance for 80% of the respondents. Also, a large group of respondents noticed that the identification system of organic food is essential, just as the high price, to which point 60% of respondents in all the periods of research. Of lesser importance in consumers' choices is shorter durability of organic food and the fact that it was produced in a clean environment. The significance of the wide assortment, the ease with which organic food may be prepared and consumed is a growing need amongst the respondents.

While identifying consumers' expectations in terms of organic food, the respondents were asked about the main characteristics of products which influenced their decisions. In this case they assessed the significance of three kinds of attributes: sensory (colour, smell), functional (composition, shelf life, production and processing methods) and prestige (producer's logo, country/region of origin, place of purchase and price). The respondents indicated the three most important attributes of organic food and those which determine their choice (Table 2 and 3).

Table 2. Sensory, functional and prestige attributes of organic food in the opinion of respondents (%)

Criteria of choice	2005	2010	2013
Sensory attributes			
Appearance (colour, texture)	78	53	62
Smell	46	35	45
Functional attributes			
Composition	34	49	67
Expiry date (shelf-life)	24	47	52
Methods of production and processing	89	78	69
Prestige attributes			
Manufacturer's logo	34	47	58
Country/region of origin	56	44	49
Place of purchase	7	9	45
Price	89	78	56

Source: own research

Table 3. Parameters of linear multiple regression models between the characteristics of organic food and the probability of selection of these products in different periods of research

Selection criteria determining the purchase	2005		2010		2013	
	relative importance (%)	coefficient	relative importance (%)	coefficient	relative importance (%)	coefficient
Sensory attributes – technological						
Appearance (color, texture)	67.3	2.843**	65.5	0.531**	59.5	0.724***
Smell	32.7	0.532**	34.5	0.313**	40.5	0.256**
	$R^2 = 0.6578$		$R^2 = 0.7458$		$R^2 = 0.7545$	
Functional attributes – technological						
Composition	29.5	0.678**	29.5	0.756**	36.2	1.956**
Expiration date for consumption	21.0	-0.632	23.6	-1.765*	29.9	-0.786***
Production and processing methods	49.5	2.567*	46.9	2.453**	33.9	1.456***
	$R^2 = 0.6321$		$R^2 = 0.7523$		$R^2 = 0.6826$	
Prestigious attributes – market						
Manufacturer's logo	29.2	0.302**	24.3	0.456**	30.9	0.564**
Country/region of origin	16.3	0.187***	21.7	0.356*	25.9	0.321**
Place of sale	15	-0.125*	11.7	-0.231*	17.3	-0.167**
Price	39.5	-0.445**	42.3	-0.657*	25.9	-0.234**
	$R^2 = 0.5327$		$R^2 = 0.656$		$R^2 = 0.5932$	

Notes: *, **, *** – statistical significance of $\alpha \leq 0.1$, $\alpha \leq 0.05$, $\alpha \leq 0.01$ respectively.

It can be noticed that the main attributes taken into account when buying organic food are first of all the functional ones, which can be identified by the composition attribute (67%)

and production and processing methods (69%). In case of sensory attributes the most important one for 62% in 2013 is the appearance indicating traditional production technologies.

As for the prestige attributes, the producer's logo and price were the decisive aspects in 2013. Comparing the three periods of research, the place of purchase became significantly important in 2013, while only 7% considered it important in 2005.

Linear regression analysis, in which the impact of the characteristics of organic food on the probability of purchase was modeled, indicates that the values of the directional coefficients are positive for sensory attributes in each of the studied periods. High relative validity was observed in the case of the appearance in each of the studied periods and in the case of smell its highest relative importance was observed in the declarations of consumers in 2013. Linear regression analysis in which the impact of the functional attributes variables on the likelihood of purchase of organic food was modeled, indicates that in the case of the composition and the production and processing methods, the directional coefficients values are positive in all years of the research, and negative in the case of the expiration date for consumption. The composition and production and processing methods are significant for the decisions of organic food selection in each period and their relative importance is at approximately 30% for the composition and about 40% for the production and processing methods. The linear regression analysis for prestigious attributes, in which the impact of the manufacturer's logo, the country/region of origin, the place of sale and the price on the likelihood of purchase were modeled, indicates that the directional coefficients values are positive in the case of the manufacturer's logo and the region of production, and the place of sale and price indices took negative values.

Directional coefficients for technological and market attributes are statistically significant ($\alpha \leq 0.1$).

Also, the respondents' trust in manufacturers and sellers influences their choices when it comes to buying organic food, which is a natural phenomenon in such routine activities like food shopping. The pattern is shortened and the attribute assessment of the alternative products is limited. The composition or other technological attributes can only be assessed based on both reliable information placed on the packaging and the trustfulness of the

manufacturer. Therefore, while creating identification markers for organic food, it is essential for the highly trusted brands to be well-positioned so that the trust may be maintained and further developed in the target segments of market.

Conclusions

The organic product market in Poland is unstable and constantly developing, where there is much potential for wide and wise implementation of many different marketing tools. The most important aspect is, however, the segmentation of consumers and differentiation of marketing methods suited to their needs and knowledge, and especially to their varied levels of ecological awareness. Recognizing consumer behaviors, motivation leading to purchase and preferred forms of sale become of utmost importance in this respect.

The conducted research show that according to the respondents, the main factor in shaping the quality of organic food is its high nutritious value and, in consequence, the health benefits resulting from consumption. The majority of the interviewees identifies food obtained from organic farming with food produced without any chemical additives and manufactured in clean or very little polluted natural environment. Consumers appreciate the fact that organic food products contain less preservatives than the conventional ones and is characterized by a good, natural taste and natural appearance. When buying organic food, the respondents act on the conviction that such products are safe and their production process does not destroy the natural environment

The biggest group among consumers declaring eco-consumption is those who do it mainly because of the related health benefits and social aspects such as the fact that organic food consumption may contribute to reducing the pollution of the natural environment. Additionally, buying organic products supports local and regional producers. By choosing the organic food products the consumers may consciously realize a more ecological attitude towards the increasing problems of contamination of the environment as well as food. In advocating organic food, an environmentally-aware consumer achieves his goals and strengthens a producer's position at the same time. Thus, choosing eco-

logical products shapes the pro-ecological attitude in consumers. Emphasizing the health and taste attributes of organic food is not enough; it

has to coincide with the consumer's behavior and his pro-environmental bias, which become explicit in his choice of food.

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