

Consumer Behavior on the Organic Fruit and Vegetable Market: The Evidence from Poland

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Received: 24 November 2021/ Revised: 27 April 2022/ Accepted: 12 May 2022/ Published online: 10 June 2022

ABSTRACT

Consumer opinion and behavior research plays an important role in the development of the market of specific products. Currently, research in the field of consumer behavior towards organic food, which is gaining popularity on the Polish market whose production is in line with the concept of sustainable development and the European Green Deal related to it, is of particular importance. The aim of the study was to analyze the opinion and behaviors of consumers as regards organic fruit and vegetables and the promotion of these products as a determinant of them.

The data for the analyzes came from empirical research conducted in Lublin at the turn of 2019 and 2020 by means of a proprietary questionnaire. The research was carried out on a sample of 534 respondents aged over 18. The scope of the research covered the opinions and behaviors of consumers towards organic fruit and vegetables as well as the factors determining the commencement of making or increasing the frequency of purchases of these products. An attempt was also made to define the relationship between the opinions and behaviors presented by consumers and their demographic and socio-economic characteristics.

The results of the research show that half of the respondents purchased organic fruit and vegetables, of which only 1/4 claimed to do so regularly and quite often (several times a week). The respondents most often purchased these products in specialized stores – with organic food. According to the surveyed consumers, organic fruit and vegetables are rich in nutrients, healthy and safe, and produced using environmentally friendly methods. The most important factors influencing the increase in purchases and consumption and thus the development of the market for organic products were the increase in the availability of this product category in the places of everyday shopping and the reduction of their prices as the most important factors. The conducted research showed that for the respondents, promotional campaigns aimed at popularizing organic food, its values and impact on human health are not without significance.

JEL classification: Q1, Q13, Q18

Keywords: consumer behavior, organic fruit and vegetables, promotion, organic farming

1. INTRODUCTION

According to the Communication from the European Commission on the European Green Deal¹, European food is famous for being safe, high-quality, and nutritious. Despite the ongoing transition to more sustainable systems, food production still results in air, water, and soil pollution, contributes to the loss of biodiversity and climate change, and consumes excessive amounts of natural resources. Therefore, according to the document, all entities operating in the food value chain face new challenges and opportunities. New technologies and scientific discoveries combined with growing consumer awareness and the demand for sustainable food will benefit all stakeholders. Hence, research into the opinion and behavior of Polish consumers as regards organic food seems to be very important. It is produced in the farm management system and food production, combining the best practices for the environment, a high degree of biodiversity and the protection of natural resources (Brzezina et al., 2017; Council Regulation (EC) No 834/2007). It is produced in a system where the use of chemical plant protection products, artificial fertilizers, growth regulators, feed additives, antibiotics, growth hormones, ionizing radiation and the use of genetically modified organisms is limited or even avoided (Das, Chatterjee, & Kumar Pal, 2020; Kirdar, 2018; Nguyen, Wysocki, Treadwell, Farnsworth, & Clark, 2008).

Consumer behaviors are a very complex category and their multidimensional nature means that the issue may be analyzed in various ways. From a practical point of view, consumer behavior plays an important role in the development of the market for specific products (Szul, 2016), may translate into the state of the natural environment (Mańkowska-Wróbel, 2015), and also knowing them allows companies to adapt their marketing communication methods to customer needs (Hoyer, MacInnis, & Pieters, 2013; Oszust & Stecko, 2020). A detailed analysis of opinions, consumer behavior or factors influencing consumer choices constitute the basis for strategic decisions, becoming the foundation for adjusting the offer to the needs and expectations of customers (Liczmańska, 2015). Consumer behavior and the factors determining it have also been an important stream of research in economic sciences for many years (Cornescu & Adam, 2015; Malter, Holbrook, Kahn, Parker, & Lehmann, 2020). A special place in the literature on the subject is occupied by studies and research on consumer opinions and behavior, as well as the consumption and popularization of organic food. Research in this area has been conducted for many years both in Poland (including Bryła, 2016; Cichocka & Grabiński, 2009; Hermaniuk 2018; Łuczka-Bakuła & Smoluk-Sikorska, 2010; Witek, 2014; Żakowska-Biemans, 2011b) and abroad (e.g. Ertz, Karakas, & Sarigollu, 2016; Oraman & Unakitan, 2010; Radojević, Tomaš Simin, Glavaš Trbić, & Milić, 2020; Rana & Paul, 2017; Tandon, Dhir, Kaur, Kushwah, & Salo, 2020). The review of the state of research on the demand factors for the development of the organic food market in Poland was carried out, among others, by Łuczka (2019). However, there is little research into consumer perceptions and behavior (specifically) as regards organic fruit and vegetables. Therefore, an attempt was made to analyze the opinions and behaviors of consumers towards organic fruit and vegetables and the promotion of these products as a factor determining the increase in demand for them. An attempt was also made to define the relationship between the opinions and behaviors presented by consumers and their demographic and socio-economic characteristics. To this end, the following research questions were defined for the purpose of the research: 1) Do Polish consumers buy organic fruit and vegetables and where? 2) What are the opinions of consumers about organic fruit and vegetables? 3) What are the most important factors influencing the purchasing decisions of the respondents? 4) What are the respondents' most important opinions regarding the selected promotion forms of organic fruit and vegetables?

¹ Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions – The European Green Deal COM/2019/640 final.

2. MATERIAL AND METHODS

The data for the analyses came from empirical research conducted in Lublin at the turn of 2019 and 2020 by means of a proprietary questionnaire containing 8 closed-type questions. The research was carried out on a sample of 534 respondents aged over 18. The selection of the place was not accidental, as Lublin is the capital of Province with one of the highest positions in Poland in terms of the cultivation area devoted to, and the production of, organic fruit and vegetables. The quota-sampling method was applied to select the participants in the survey. The sample reflected the age structure of the city's residents, with women accounting for 55.4% of all respondents, and men for 44.6%. The division into four age groups was applied: people aged 18-29, 30-49, 50-65, and over 65 years old, who accounted for 15.0%, 41.6%, 24.7%, and 18.7% of all respondents, respectively. The data analysis took into account gender, age, the educational level (vocational, secondary, and tertiary education levels were listed), the level of disposable income (ranges: under PLN 500, PLN 501–1,000, PLN 1,001–1,500, PLN 1,501–2,000, and over PLN 2,000), and the respondents' declaration on buying organic products. The opinions and behaviors of consumers as regards organic fruit and vegetables, and the factors affecting the respondents' purchasing decisions, were also analyzed. In addition, in order to fully identify purchasing determinants and the increased frequency of buying organic fruit and vegetables, the opinions of the respondents about selected forms of promotion of the said products were examined. These forms of promotion were divided into two spheres of measures. The first group involved "Publicity" measures addressed to a wide group of recipients, entailing communication with various groups with a view to creating and maintaining a positive product image among potential clients/consumers. The second group took into account various forms of supplementary promotion addressed to specific clients, with the possibility to undertake such promotional measures at points of sale. The questionnaire included closed-ended – single-choice and multiple-choice questions, as well as numerical scales. As regards the assessment of statements, the 5-point variant (the Likert scale) was selected including the so-called neutral option: "I neither agree nor disagree". To find statistically significant differences between the characteristics describing consumers and the behavior and opinions of consumers as regards organic fruit and vegetables and their promotion, the Chi² test (χ^2) was used with a significance level below 0.05, and the Cramer's V (V_c) coefficient was used to find out the strength of the interaction between the analyzed variables². The study also provides insight into the state of organic farming and the organic product market in Poland against the backdrop of selected European countries.

3. RESULTS AND DISCUSSION

3.1. Organic Farming and the Organic Product Market in Poland and in Europe

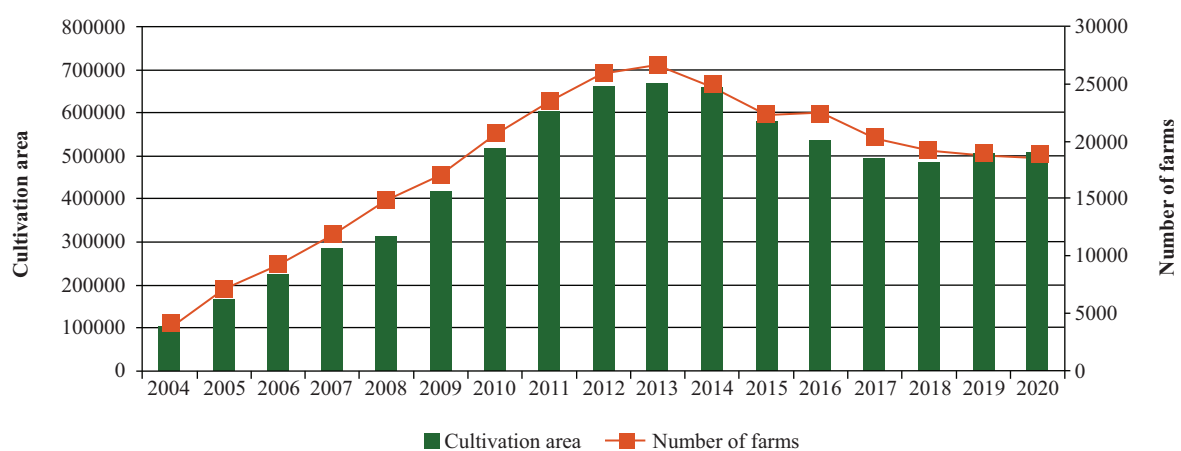
Since 2004, Poland has been experiencing fairly rapid growth in terms of land intended for organic farming, and in the number of organic farms. As per data from the Agricultural and Food Quality Inspection (IJHAR-S), in 2020, the total agricultural area cultivated in line with the organic farming system in Poland amounted to 509,300 ha, while the number of organic farms was 18,575 (Figure 1). In comparison to 2004, the area of such agricultural land increased 4.6 times, and the number of farms saw an over five-fold increase. This trend was much higher in respect of organic fruit and vegetables. In 2004, these crops covered an area of 2040.7 ha, and in 2018 an increase of over 20 times was recorded, to the level of 42,862.5 ha. Furthermore, according to the most recent report by the Research Institute of Organic Agriculture FiBL and IFOAM Organics Europe,

² In the case of this coefficient, according to Pułaska-Turyńska (2008) and Rószkiewicz (2002), it is not required that any of the features / data should be quantitative.

Poland is currently ranked fifth in terms of the largest areas of temperate-zone organic orchards and fruit-shrub plantations, and eleventh in terms of organic vegetable cultivation in the world (Willer, Schlatter, Trávníček, Kemper, & Lernoud, 2020). Despite the rapid growth in the organic production system, the share of organic products in general food retail, the value of the organic food market, and per capita consumption in Poland remain at a very low level (Bryła, 2015; Łuczka, 2019; Żakowska-Biemans, 2011a). This also refers to the fruit and vegetable market (Pawlak, Paszko, & Wróblewska, 2016). According to data from 2019 concerning the organic food market in Europe, the share of organic products in the overall food market in Poland is only 0.6%, while in Sweden and Switzerland it is around 10%, and in Denmark 11.5%. In addition, the value of organic retail sales in Poland is only EUR 250 m per year, while in Germany it amounts to nearly 11 bn, in France to 9.2 bn, and in Switzerland and the United Kingdom to over 2.5 bn per year. In this respect, Poland is ranked fourteenth in Europe, which is relatively low given the size of the population (Willer et al., 2020). As regards per capita values, the average Pole spends only 7 euros per year on organic food, compared to the Swiss and Danes with 312 euros each, Swedes – 231 euros, Luxembourgers – 221 euros, Austrians – 205 euros, Germans – 116 euros, and the French – 136 euros per year. The European average is 60 euros, and the European Union average is 40 euros (Willer et al., 2020). The above data demonstrate the fairly low position of Poland in the sales and consumption of organic food in relation to other European countries. At the same time, they reflect the considerable growth potential of this market sector in the years to come. All the more so as per the results of the studies carried out to date (i.a. Hermaniuk, 2018; Witek, 2014), the demand for organic products is growing in Poland. This is due to the change in consumers' attitudes to healthy nutrition, and the raised awareness of the environmental impact of food production (Cichočka & Garbiński, 2009; Kieźel, Piotrowski, & Wiechoczek, 2019). In turn, the experience of other countries, e.g. Austria, Germany, and Denmark, shows that consumers' increased interest in organic food has become one of the factors contributing to the growth of this food sector (Klinbacher & Pohl, 2004; Michelsen, Hamm, Wynen, & Roth, 1999). Nonetheless, it is necessary to continuously promote the consumption of organic products and organic farming, using various means of communication, in order to reach growing numbers of recipients, and to raise their awareness in this sphere. It is possible to read about it in the publication of Kuhan and Juvanic (2010).

Figure 1

The area of organic agricultural lands and the number of organic farms in Poland from 2004 to 2020



Source: own study based on IJHARS data.

3.2. Selected consumer opinions and behavior towards organic fruit and vegetables

Environmentally friendly (“green”) consumer behavior is a multidimensional category, and, according to Ertz, Karakas and Sarigollu (2016), it can be exhibited in both the private and public spheres. Behavior in the private sphere has direct consequences for the environment, and is related to, i.a., eco-friendly purchases.

The results of the conducted survey show that 50.4% of the respondents purchased organic fruit and vegetables, although 35.1% of the group stated that they did so only occasionally (qu. 1). Just slightly over a quarter of the survey participants declaring the purchasing of the aforementioned products claimed that they did so frequently – as much as several times a week. Specialized shops (organic food shops) were the most frequently mentioned places for shopping for organic products, to which on average 43.2% of the respondents declaring the purchasing of organic products turned for their supplies. Nearly a third of this respondent group purchased fruit and vegetables at weekly organic food markets, and 9% were supplied with such food directly by producers. A quarter of the respondents who did not declare buying organic fruit and vegetables stated that they were not able to identify organic products or notice the difference between them and those produced using conventional methods, while approx. 20% of the group stated that they were unable to provide any reason for not buying such products. That is why, it is essential to undertake promotional activities in order to attract potential buyers and inform them about assets of organic products, the location and conditions of purchase, as well as the advantages of buying them.

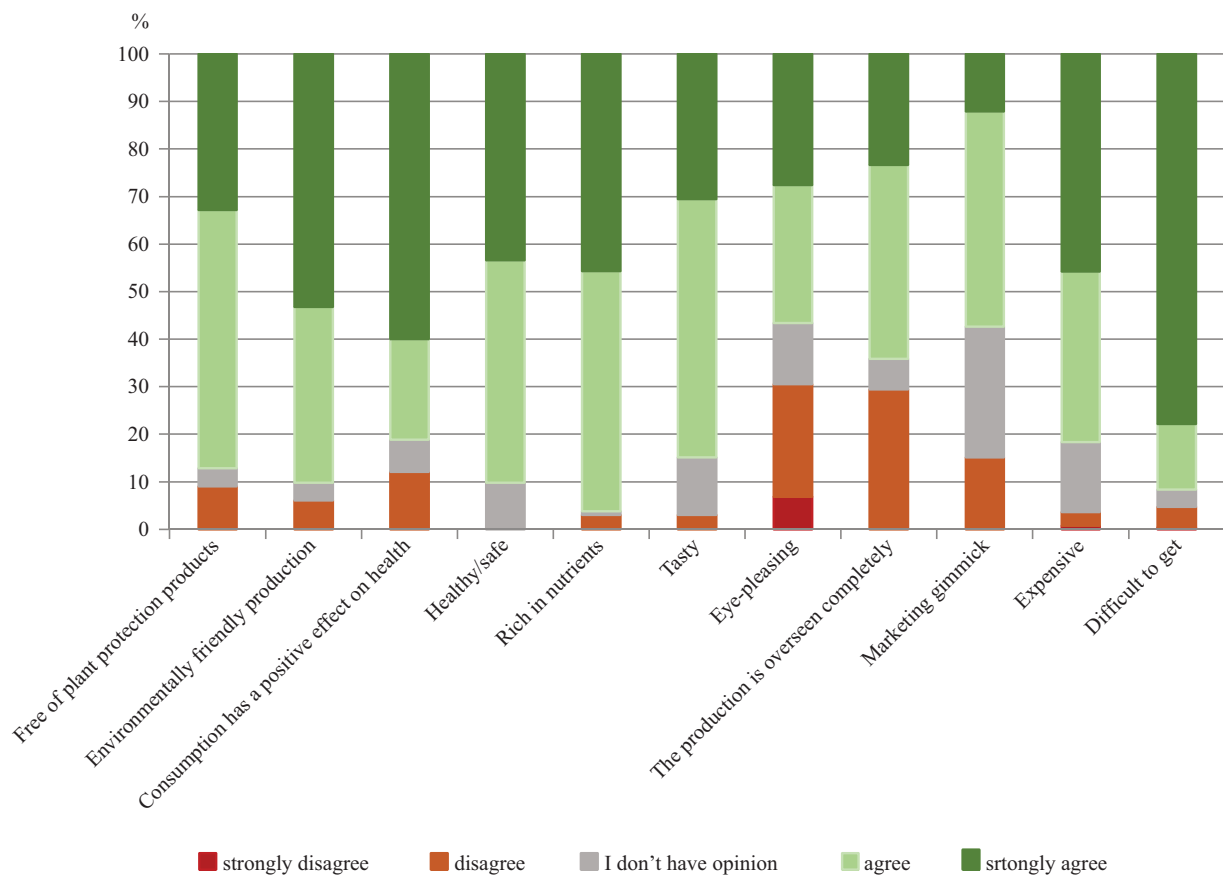
Despite the fact that the consumption of organic food is still at a relatively low level in Poland, consumers have expressed interest in these products (Grzybowska-Brzezińska, 2013; Hermaniuk, 2018; Kieźel et al., 2019). This is confirmed by the results of the studies on the behavior of consumers from Lublin as regards organic fruit and vegetables. They show that consumers perceive this category of food positively. Over 90% of the respondents stated that they strongly agreed, or agreed, with the view that organic products were rich in nutrients (96.2%), produced using environmentally friendly methods³, and healthy and safe (90.2% each) (Figure 2). In addition, 87.2% and 84.9% of the survey participants, respectively, stated that organic fruit and vegetables were free of plant protection products and tasty. In contrast, 91.7% of the respondents strongly agreed, or agreed, with the view that organic fruit and vegetables were difficult to get, with 81.7% sharing the view that the products were relatively expensive⁴. The verification with the χ^2 test and the Cramer’s V coefficient showed a significant relationship and a moderate relationship between the last opinion expressed and the characteristic related to the declaration of organic fruit and vegetables purchase by the surveyed consumers (Table 1). In the case of the remaining opinions and behaviors of the respondents as regards organic fruit and vegetables, a statistically significant correlation was observed, but a weak relationship depending on selected socio-economic and demographic characteristics of consumers.

³ The above opinion was placed at the top of the ranking among women, people declaring that they purchased organic fruit and vegetables, people with the highest income levels, and people with tertiary education – 86.5%, 90.2%, 89.1%, and 100%, respectively, of the respondents belonging to the aforementioned groups agreed with this statement. In addition to stating that organic fruit and vegetables were produced using environmentally friendly methods, all respondents with the highest income shared the view that those products were rich in nutrients, healthy, and safe.

⁴ Referring to the latter opinion, women, people who do not purchase organic fruit and vegetables, and young people stated much more often that these products were expensive, compared to the representatives of other groups.

Figure 2

Opinions of consumers from Lublin about organic fruit and vegetables (% of indications)



Source: own study based on surveys.

Based on the analysis of answers provided by individual groups of respondents, it can be stated that, irrespective of gender, the conviction that consuming organic fruit and vegetables has a positive impact on health was at the top of the ranking in respect of 86.5% of women, 86.6% of men, and 89.6% of people aged over 65 (qu. 2). As regards people belonging to the youngest group of respondents, most people (86.3%) stated that organic fruit and vegetables were difficult to find, but nevertheless were rich in nutrients⁵. In contrast, only 66.3% of the respondents belonging to this group shared the view that the consumption of organic fruit and vegetables had a positive effect on health.

⁵ With a significance level of $\alpha < 0.05$, no statistically significant correlation was found between the expressed opinion and the gender, age and education of the respondents.

Table 1

Influence of selected socio-economic and demographic characteristics on the opinions and behavior of consumers as regards organic fruit and vegetables

Specification	Gender		Age		Education		Income		Purchase declaration	
	χ^2	V_c	χ^2	V_c	χ^2	V_c	χ^2	V_c	χ^2	V_c
Free of plant protection products	32.54*	0.24	27.61*	0.13	18.18*	0.13	123.18*	0.24	61.13*	0.34
Environmentally friendly production	14.83*	0.17	33.48*	0.14	10.90	0.10	78.23*	0.22	33.93*	0.25
Consumption has a positive effect on health	50.99*	0.31	40.13*	0.16	28.77*	0.16	206.25*	0.31	15.67*	0.17
Healthy/safe	12.80*	0.16	19.22	0.11	29.80*	0.17	75.53*	0.22	69.26*	0.36
Rich in nutrients	6.23	0.11	13.18	0.09	14.54	0.12	59.25*	0.19	54.95*	0.32
Tasty	41.83*	0.28	32.90*	0.14	19.07*	0.13	119.75*	0.27	23.45*	0.21
Eye-pleasing	47.59*	0.30	83.28*	0.23	30.03*	0.17	31.29*	0.12	29.25*	0.23
The production is overseen completely	13.11*	0.16	122.07*	0.28	22.82*	0.15	91.80*	0.24	27.44*	0.23
Marketing gimmick	43.47*	0.29	57.23*	0.19	36.71*	0.19	123.94*	0.24	32.99*	0.25
Expensive	22.18*	0.20	95.24*	0.24	17.98*	0.13	194.81*	0.30	92.33*	0.42
Difficult to get	10.73*	0.14	24.07*	0.12	19.39*	0.13	34.05*	0.13	5.45	0.10

* significance at significant level $\alpha < 0.05$

Source: own study based on surveys.

Consumer behavior towards organic products depends on various factors (Aschemann-Witzel & Zielke, 2015; Salleh, Ali, Harun, Jalil, & Shaharudin, 2010). It is determined by, e.g., income levels, knowledge and awareness of ecology, and marketing activities. The latter include promotional measures which turn buyers' attention to a given product and facilitate access to information on the benefits which might be derived from its purchase.

According to Bryła (2016), Łuczka-Bakula and Smoluk-Sikorska (2010) and Żakowska-Biemans (2011a), high prices and low availability act as principal barriers to organic food consumption in Poland. This was confirmed by the conducted research. The consumers taking part in the survey found that the most important factors which determined their decision to buy organic fruit and vegetables or to increase the frequency of such purchases included their availability in retail outlets where they regularly do shopping⁶ (average grade on a five-point scale: 4.6)⁷, provision with the package information on the absence of pesticide residue ($\bar{x} = 4.5$)⁸, and price reduction ($\bar{x} = 4.4$) (Figure 3). The statistical analysis shows that consumers, regardless of their age, similarly perceived the reduction in prices of organic fruit and vegetables as a factor determining the purchase of these products. In the case of other factors (gender, education, income earned and declarations of purchase of organic products), a statistically significant correlation was observed, which was however very weak (low values of the Cramer's V coefficient) (Table 2).

⁶ Compared to Kuhan and Juvanic (2010).

⁷ This was the most important factor for women and elderly people aged over 65 (96.5% and 94.5% of indications, respectively).

⁸ This factor was considered as the most important during the purchasing of organic fruit and vegetables by people with the highest disposable income per capita (100% indications).

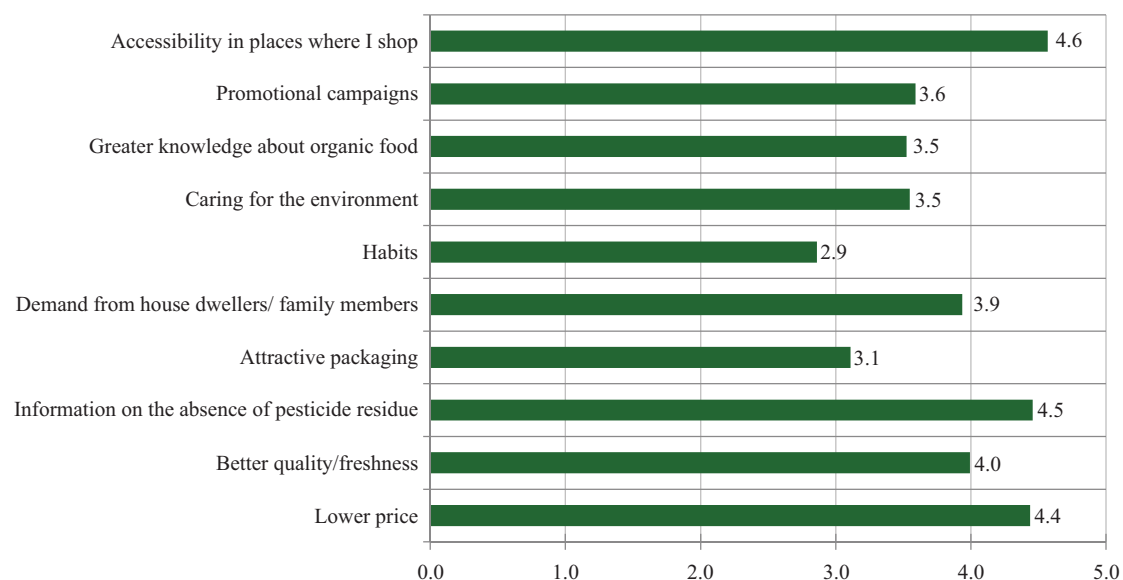
The fact that the respondents chose two of the above-mentioned statements, as in Ran and Paul's (2017) study on lowering the prices of organic fruit and vegetables as well as their availability in retail outlets of everyday shopping, raises some particular and quite rhetorical questions. The first question is "Is it possible to reduce the price of organic fruit and vegetables?". And the second one is "Is it possible for organic fruit and vegetables to be available in every shop where consumers shop?"

The survey also showed that while selecting organic fruit and vegetables, better quality/freshness of products, and internal home/family conditions – i.e. demand from household members – were (would be) important for the respondents (Figure 3). The above factors were considered important by 82.6% and 72.1% of the analyzed groups, respectively⁹. The interest in the quality and freshness of organic fruit and vegetables was higher among men and people who buy these products (Table 2). Moreover, similarly to the preceding factor, men (86.6%) and people declaring the purchasing of organic fruit and vegetables (84.8%) believed that the demand from household members was a vital factor determining their purchasing decisions more frequently than women (60.8%) and people who did not buy such products (60.2%).

It is also worth noting that 60.9% of the respondents exhibited a positive attitude towards promotional campaigns on organic fruit and vegetables ($\bar{x} = 3.6$) (Figure 3). The declaration of the purchasing of organic products did not significantly differentiate this attitude. In addition, it can be stated that over 55% of the survey participants were interested in expanding their knowledge of organic food (56.5% of the respondents considered this factor to be important or very important). The data in Table 2 shows that there is a statistically significant correlation between gender, age, education, income, and the declaration of purchase of organic products, and the opinion expressed. However, a value of the Cramer's V index between 0.20 and 0.31 indicates a low relationship. The least significant factors affecting consumer decisions included habits ($\bar{x} = 2.9$) and attractive product packaging ($\bar{x} = 3.1$).

Figure 3

Purchase determinants and increasing frequency of purchase of organic fruit and vegetables according to examined consumers' opinions (average on the scale of 1–5)



Source: own study based on surveys.

⁹ The statistical dependence, with these two factors, was at the moderate level (depending on the feature, the Cramer's V coefficient ranged from 0.35 to 0.42; $p < 0.05$).

Table 2

Influence of selected socio-economic and demographic characteristics on the decisions to purchase organic fruit and vegetables by the surveyed consumers

Specification	Gender		Age		Education		Income		Purchase declaration	
	χ^2	V_c	χ^2	V_c	χ^2	V_c	χ^2	V_c	χ^2	V_c
Lower price	33.09*	0.25	16.79	0.10	33.09*	0.18	67.01*	0.18	39.39*	0.27
Better quality/ freshness	63.51*	0.35	74.47*	0.21	18.54*	0.13	27.29*	0.11	96.05*	0.42
Information about absence of pesticide residue	24.65*	0.22	19.17	0.11	17.19*	0.13	43.99*	0.17	14.91*	0.17
Attractive packaging	70.75*	0.37	73.35*	0.21	47.69*	0.21	62.56*	0.17	60.41*	0.34
Demand from house dwellers/family members	93.93*	0.42	64.33*	0.20	25.16*	0.15	146.94*	0.26	92.13*	0.42
Habits	81.78*	0.39	38.24*	0.15	49.29*	0.21	134.68*	0.25	19.25*	0.19
Caring for the environment	22.03*	0.20	125.90*	0.28	19.39*	0.13	61.72*	0.20	96.27*	0.43
Greater knowledge about organic food	32.53*	0.25	150.21*	0.31	43.56*	0.20	127.25*	0.24	25.16*	0.22
Promotional campaigns	27.51*	0.23	141.17*	0.30	40.91*	0.20	128.38*	0.25	9.26	0.13
Accessibility in places where I shop	28.43*	0.23	55.16*	0.19	33.33*	0.18	108.73*	0.23	25.09*	0.22

* significance at significant level $\alpha < 0.05$

Source: own study based on surveys.

3.3. Selected Forms of Promotion of Organic Fruit and Vegetables in the Views of Consumers

Today, given the free market economy and the overproduction of food, it is not enough to merely produce particular goods to be successful on the market. It is important to intensify a range of sales efforts (Al-Noorachi, 2014) or select new distribution channels (Grzybowska-Brzezińska, 2013; Sonneck & Ott, 2010). Moreover, it is crucial to create and intensify communication measures which provide information on the advantages and benefits of the purchasing of organic products, vital for both consumers and producers.

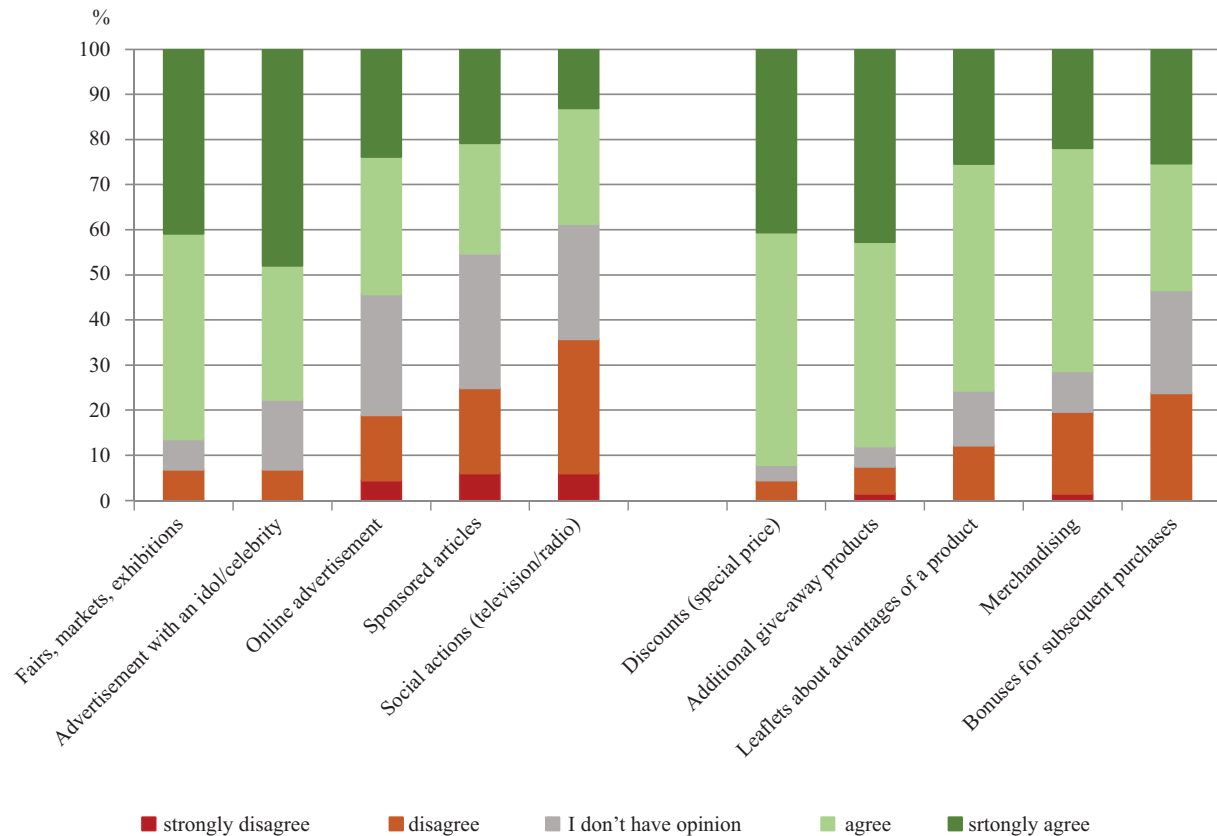
In the opinion of the survey participants, the most important forms of promotion aimed at encouraging consumers to buy organic fruit and vegetables included special price offers (92.1% of the respondents agreed with this answer option), participation in regularly organized fairs or exhibitions where they could buy the products concerned (86.3%), and additional give-away products (88.0%)¹⁰ (Figure 4). During the interviews, the respondents also provided their suggestions for promotional measures which would convince them and other consumers to purchase organic products. The suggestions included various forms of promotion in the so-called “whisper marketing” category, for instance, providing a given product to opinion leaders on

¹⁰ In general, the respondents found forms of supplementary promotion available at points of sale to be more persuasive in the context of the purchasing of organic fruit and vegetables than the forms referred to as “publicity”. As regards the former form of promotion, between 54.3% and 92.1% of the respondents strongly agreed, or rather agreed, with the statement that a given form of promotion would encourage them to buy organic fruit and vegetables or reach for them more frequently. As for the latter set of forms of promotion, such an opinion was shared by a maximum of 83.3% of the respondents.

the internet (influencers) who would initiate a trend by posting a review of the product. The least appealing forms of promotion for the respondents were sponsored articles (45.3%) and advertisements broadcast on television and radio as part of public awareness campaigns (38.8%).

Figure 4

The respondents' susceptibility to promotional measures related to organic fruit and vegetables (% of indications)



Source: own study based on surveys.

At a significance level of $\alpha < 0.05$, no significant correlation was found between the opinions of the respondents on advertising with famous people and the age of respondents. Moreover, the statistical investigation showed that the effectiveness of internet advertising and the level of education of the respondents are not significantly correlated (Table 3). In the case of the remaining opinions and variables determining the characteristics of consumers, a statistically significant correlation was found (the majority was the basis for rejecting the null hypothesis). Chi-square statistics calculated for the null hypothesis about the independence of two variables, assuming the critical significance level of $p < 0.05$, showed values that allowed for rejecting the null hypothesis. When analyzing the results of the Cramer's V statistics as a measure of the dependence of variables, it should be remembered that the closer the value of the coefficient is to one, the stronger the relationship between the variables. In the case of the above-mentioned variables, the value of this statistic ranged from 0.12 to 0.44, respectively.

Table 3

Influence of selected socio-economic and demographic characteristics on the opinions and behavior of consumers as regards the promotion of organic fruit and vegetables

	Specification	Gender		Age		Education		Income		Purchase declaration	
		χ^2	V_c	χ^2	V_c	χ^2	V_c	χ^2	V_c	χ^2	V_c
‘Publicity’ forms of promotion	Fairs, markets, exhibitions	43.40*	0.29	32.00*	0.14	21.32*	0.14	93.34*	0.24	60.27*	0.34
	Advertisement with an idol/celebrity	43.40*	0.29	12.76	0.09	9.29	0.09	86.16*	0.23	60.66*	0.34
	Online advertisement	74.09*	0.37	24.17*	0.12	14.71	0.12	193.70*	0.30	128.98*	0.49
	Sponsored articles	81.93*	0.39	40.78*	0.16	28.89*	0.16	297.37*	0.37	87.71*	0.41
	Social actions (television/radio)	26.12*	0.22	69.51*	0.21	20.48*	0.13	144.18*	0.26	34.70*	0.25
Consumer forms of promotion	Discounts (special price)	26.93*	0.22	56.64*	0.19	24.27*	0.15	80.97*	0.23	102.53*	0.44
	Additional give-away products	27.72*	0.23	39.63*	0.18	26.33*	0.15	68.68*	0.18	25.32*	0.22
	Leaflets about advantages of a product	52.76*	0.31	27.10*	0.13	19.51*	0.14	74.78*	0.22	82.28*	0.39
	Merchandising	22.40*	0.21	49.35*	0.18	25.94*	0.16	162.67*	0.28	93.68*	0.42
	Bonuses for subsequent purchases	20.92*	0.20	104.51*	0.26	27.51*	0.16	54.00*	0.18	83.30*	0.40

* significance at significant level $\alpha < 0.05$

Source: own study based on surveys.

4. CONCLUSIONS

Research into consumer behavior plays a vital role in the development of the markets for specific products or product groups. Knowledge of consumer views and preferences facilitates the alignment of the proposed product portfolios with their expectations. Research into the consumption and popularization of organic food, whose production is consistent with the concept of sustainable development and the European Green Deal referring to this idea, is currently gaining special significance.

A very intense growth in the acreage of organic crops can be currently observed in Poland. However, it is not closely correlated with the development of the organic product market, including fruit and vegetables. Taking into account the amount of spending on organic food or the value of organic food sales in Europe and in Poland it can be stated that the domestic organic product market, including horticultural products, is still at the initial stage in its development. This situation can be attributed to a still low share of organic products in domestic sales volumes on the food market. Nevertheless, the interest in organic food, which has been growing in recent years in Poland, might become an opportunity for the growth in the market for these products. The more so as Polish consumers perceive this food category rather positively. The respondents considered organic fruit and vegetables to be nutrient-rich, healthy and safe products, and in their opinion, are produced using environmentally friendly methods. Unfortunately, at the same time, many people considered these products difficult to obtain and relatively expensive. Therefore, according to the research, it is necessary to increase the supply of this type of products, especially in places

of everyday shopping, to reduce their prices¹¹, to provide a range of information on the products being sold (e.g. information on the lack of pesticide residue or on the advantages and beneficial effects on human health), and to introduce other forms of promotion. The respondents could also be encouraged to purchase and consume organic fruit and vegetables by their participation in fairs and exhibitions organized on a regular basis where they could buy organic products and expand their knowledge of the subject. Based on the analysis, it can be concluded that socio-economic and demographic criteria relatively weakly differentiate consumer opinions and behavior in respect of organic fruit and vegetables.

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¹¹ Prescinding from the answer – it may be extremely hard.

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