




## Article

# Prices of Organic Food—The Gap between Willingness to Pay and Price Premiums in the Organic Food Market in Poland

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**Abstract:** High prices of organic food are the main obstacle to the growth of the demand for organic food. This study's main objective was to quantify the size of the gap between consumers' willingness to pay more for organic food and the actual price premiums for organic food in Poland. Therefore, a two-step research study was undertaken. In order to identify barriers to the growth of organic food consumption and the perception of organic food prices, a survey based on an online questionnaire of 516 respondents was conducted. To determine price premiums of organic food, prices of organic and conventional food were quoted in 45 retail outlets offering organic and conventional food located in the Poznań agglomeration between October 2022 and June 2023. This research demonstrated a low acceptance of the high prices of organic food among consumers (only 14% of the investigated consumers were willing to pay more than 40% for organic food). On the other hand, the price premiums ranged between 35% and over 270%. To reduce the divergence, the measures supporting organic market development should be intensified with the simultaneous further involvement of supermarket chains. Along with these activities, the promotion of organic food ought to be carried out, considering that, as this research shows, men have fewer positive perceptions of organic food and, therefore, they should be targeted in the promotion measures.

**Keywords:** organic food; prices; perception; barriers; willingness to pay; price premiums



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## 1. Introduction

Organic agriculture is a production system that sustains the health of soils, ecosystems, and people. It relies on ecological processes, biodiversity, and cycles adapted to local conditions rather than using inputs with adverse effects. Organic agriculture combines tradition, innovation, and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved [1]. Organic farming is commonly believed to bring certain environmental, economic, and social benefits; therefore, it is one of the essential elements of sustainable development in rural areas.

The organic food market is currently one of the most dynamically developing sectors of the food market in the European Union. The global organic food and beverage market value was estimated at USD 208.19 billion in 2022 and is expected to grow at an annual rate of 11.7% from 2023 to 2030. The value of the Polish organic food market is estimated at PLN 1.36 billion, which is 0.5 percent of the entire Polish food market, and a double-digit growth rate is estimated in the coming years [2]. This results from the increasing wealth of societies and the growing awareness of consumers regarding the quality and safety

of food and its impact on human health [3]. The organic food and beverage sales value is expected to increase due to changes in consumer purchasing behavior resulting from increased awareness and focus on quality [4]. The quality of organic food is a key source of its competitive advantage over conventional food. On a global scale, almost 76.4 million ha were covered by organic certification in 2021 (in 1999, 11 million ha), constituting 1.7% of the agricultural area worldwide [2].

In Poland, there are favorable conditions for developing organic production methods due to the relatively low degree of agricultural chemical use and small farms operating within the country. The number of organic farms and the area of their agricultural land have been systematically increasing in recent years, which is due mainly to the support of organic agriculture under the EU measures. Poland is ninth in the EU in terms of the area devoted to organic farming, seventh in terms of the number of farms and processors, and fourteenth in terms of sales volume [5]. In 2021, the total area of organic agricultural land in Poland amounted to 549 thousand ha, which translated into an increase of 7.95% compared with 2020. The number of organic farms (in total during the conversion period and with certification) was approximately 20,000 entities [6], which is 7.6% more compared with 2020 when there were 18.6 thousand of them. The largest number of organic farms are located in the Warmian–Masurian Voivodeship (17.3% of all organic farms), Podlaskie (16.9%), West Pomeranian Voivodeship (12.1%), and Masovian Voivodeship (11.6%). Nevertheless, a significant demand for organic food is the rationale for further development and support for organic production methods. Consumer studies show that the price level is still the most crucial obstacle to increasing demand for organic food. The main reason for the low share of the organic food market in many less-wealthy countries is the price level of organic food. In 2021, organic food purchases were highest in Switzerland, with EUR 425 spent per person. The EU average came to EUR 104.3. Eastern European countries show the lowest spending, with Estonia, the Eastern European country with the highest per capita spending, still below half of the EU average [7]. An average Polish consumer spent EUR 8 on organic food in 2021.

Pricing plays a crucial role in consumer perception of overall product quality [8–13]. Price perception determines a consumer's decision to purchase a good [11,14]. It demonstrates information about a product and delivers a deep meaning for the consumers [15]. Hence, price is a significant aspect in purchasing decisions, particularly when considering products that are regularly purchased, and in turn, impacts the choice of outlet, product, and brand to patronize [16]. Consumers are very rational in terms of judging what benefits they would like to obtain from purchasing the goods they pay for [17]. The price of a product is divided into three dimensions: fair price, fixed price, and relative price. Fair price refers to the adjustment of a price that offers a combination of quality and appropriate services at a reasonable price. A fixed price is a set price for all buyers [15]. Relative price is the price set according to the quality and service of the seller [18]. Many studies indicated that most respondents consider price to be an important factor influencing their purchase decisions [19–21], and according to Kotler et al. [22], high prices in a highly competitive market can permanently lose customers due to the effect of increased pricing.

While consumers often have positive attitudes toward organic foods, their actual purchases remain low [23,24]. This incoherence is called the attitude–behavior gap or attitude–intention–behavior gap [25,26]. The attitude–behavior gap describes a situation where consumers express a variety of positive attitudes toward a product or even favorable buying intentions, but their actual behavior falls short of these due to numerous reasons [26]. The primary purchasing obstacles for organic food are price, lack of immediate availability, sensory criteria, insufficient or overload of information, the low-involvement feature of food products in conjunction with well-established purchasing habits, and the absence of transparency and trust in labels and certifications. The last three limitations are mostly psychological ones [27].

Certified organic products are more expensive than their conventional substitutes. Their production costs are higher because organic production methods require careful

management of the whole process, from the raw materials and subsidiary materials to the packaging (the product is manufactured using an eco-friendly approach and production method) [28–30]. Yields are lower than in conventional agriculture due to the lack of use of artificial fertilizers and other plant protection products. Organic production is more complex than conventional production, requires more knowledge from the farmer, and has certain limitations in the use of production means (fertilizers, plant protection products). Apart from the higher production costs, the price relationships between organic food and conventional food are also influenced by market maturity, demand–supply relationships, distribution channels, and the degree of product processing [31]. Adding environmental attributes to a product increases initial costs but provides growth in perceived value [32]. As stated by Łuczka and Kalinowski [33], the relationships between organic food prices and conventional food prices in the European Union are highly diversified, reaching levels of over 300% in some countries and depend, among others, on market maturity, supply–demand relationships, and the development of distribution channels. Too-high prices may limit the demand for a product, resulting in a lack of profitability and opportunities to use the economies of scale, as well as low profitability of production and sales, thus causing price increases. Spiller described this as a vicious circle of pricing strategy [31].

For the modern consumer, not only the product itself is important but also the production cycle and its impact on the environment and humans. Today, consumers do not want anonymous food. They have more trust in products manufactured under supervision [34]. Padel and Foster [35] indicate that a consumer will be willing to pay more for organic food when he/she is convinced that the price is justified by higher quality or other benefits to consumers who choose this food. Very often, a purchaser is willing to pay more, an additional amount, to secure improvements in social conditions. For a consumer, price is a measure of the product's value when it is associated with perceived benefits, which are a combination of the attributes of the purchased goods in relation to their individual usefulness for a given buyer [36].

Consumers have to accept a higher price if they prefer organic products over conventional ones. This reasoning suggests that not price but willingness to pay (WTP) is the key factor in making decisions about purchasing organic products [37]. Willingness to pay is defined as the maximum price that a buyer is willing to pay for a given good [38]. WTP may be influenced by various factors, and one of the main ones is the level of knowledge about the product. Consumers may differ in their willingness to pay a so-called premium (difference between the price of organic and conventional products) for a given product attribute, depending on which one they particularly value or whether they have information about it. WTP is, therefore, a measure of the economic value that a person attributes to the benefits of a consumption experience, expressed in monetary units [8]. As Witek [39] points out, the willingness to pay higher prices for organic products varies depending on the type of product, stage of market development, consumers' environmental awareness, and purchasing behavior. Li and Kallas' [40] meta-analysis research of consumers' willingness to pay for sustainable food products highlighted that gender, region, sustainable attributes, and food categories influence the WTP estimate, and there are significant differences between global regions. According to their results, the overall average willingness to pay a surcharge for sustainability in percentage terms was 29.5% [41]. Henson [42] claimed that WTP is the theoretically valid measure of the value consumers attach to food safety improvements. Numerous claims have been made about the benefits of organic food in order to justify the premium price that consumers have to pay [43]. According to Hamm et al. [44], of the sales arguments used to justify the price premium for organic foods, the most important was food safety, followed by nature conservation and taste.

The literature reveals that quality perceptions have a positive effect on WTP [8,32] and suggests a positive link between the perceived quality of food and purchase probability [45]. Health perceptions should also positively affect WTP because consumers will likely value healthful food's risk-reducing properties against future poor health [46].

Regarding organic food prices, there are no regular quotations of prices and research on organic food price premiums in Poland, as is the case of more developed organic food markets like Germany, Denmark, Italy, and the USA. No results covering long-term research and various retail outlets have been published so far, apart from a few works carried out over a short period in a relatively small number of retail outlets [47–49]. These studies comprised either a limited number of products or only a few selected retail outlets, and, therefore, they do not demonstrate a full image of the investigated phenomena. In order to fill this research gap, it was necessary to undertake broader research on the level of prices of organic food, which would present a more comprehensive picture of the market. It was also essential to investigate the disproportion between the recorded price premiums and the consumer WTP for organic food to quantify the size and kind of imbalance in the organic market. Therefore, a consumer questionnaire survey was undertaken on the barriers to organic food consumption, particularly on the high price and the WTP.

The main objective of the presented study is to quantify the size of the gap between consumers' willingness to pay more for organic food and the actual level of price premiums for organic food in the market in Poland. The specific objectives were:

- To identify the perception of organic food prices by the purchasers and their WTP;
- To determine the average price premiums for organic food products available on the market;
- To compare the WTP and the perception of organic food price level with the obtained price premiums.

## 2. Materials and Methods

This study consists of considerations resulting from a two-step study. The first step was to define the price premiums for organic food (the difference between the price of organic and conventional food) and eventually compare WTP with the price premiums. The second step of this study was to investigate organic food consumers, recognize the most important obstacles to purchasing organic food, and identify the willingness to pay (WTP) more for organic food among these consumers.

The second part of this study covered the determination of price premiums of organic food. For this purpose, the prices of organic and conventional food were quoted in various types of retail outlets offering organic and conventional food located in the Poznań agglomeration, namely in:

- Fifteen specialist stores with organic food;
- Fifteen general grocery stores offering conventional food;
- Fifteen outlets of retail chains with an assortment of both types of food.

Price quotations lasted 9 months (between October 2022 and June 2023). Weekly price registers were kept by 6 suitably trained people. Each week, 60 price registers were created—30 for organic food and 30 for conventional food—with two registers covering both types of food created in each retail network outlet. The price quotations covered 35 food products in 12 product groups, such as vegetables, fruit, bread, fruit preserves, vegetable preserves, cereal preserves, dairy products, eggs, meat and meat products, vegetable fats, coffee and tea, and sweets. The appropriate organic products and their conventional equivalents were selected based on their availability in retail stores. The chosen retail outlets also had to meet certain conditions regarding the breadth and depth of the product offer.

The collected data were continuously cleaned, grouped, and statistically analyzed. Using the data collected from all retail outlets, arithmetic averages were calculated for all weeks, months, and, eventually, for the entire period under study. Based on the calculated average prices of organic and conventional food products, the so-called price premium, also considered relative price, is the percentage by which an organic product's selling price

exceeds (or falls short of) a benchmark price for a conventional product [47]. It can be determined using the following formula:

$$\text{Price premium}(\%) = \frac{\text{Organic product price} - \text{Conventional product price}}{\text{Conventional product price}} * 100\% \quad (1)$$

Price premiums were calculated weekly and monthly (average), and finally, the average for the entire period under the study was calculated. The premium is generally perceived as the amount paid in excess of any additional economic production costs [50]. Organic food produced from organic raw materials in an organic production process is more expensive, and it is perceived as a luxury good [47,51–54]. Price premium is one of the characteristics of luxury goods, and producers or distributors set price premiums on luxury products to gain an advantage over market competitors [55]. In theoretical economics, a price premium is defined as a high price that generates above-average profits. Therefore, a premium should be regarded as the amount in excess of a “satisfactory” price that is justified by the product’s “real” value [47]. At the same time, a price premium reflects consumers’ willingness to buy and pay for a given product regardless of its price [54]. On the other hand, the willingness to pay may be used in order to estimate the demand curve and the price elasticity of demand and can be considered as consumer marginal benefit.

Therefore, empirical research was conducted in order to identify barriers to the growth of organic food consumption, particularly in terms of the price level and the WTP. Data were obtained using a survey questionnaire including 22 main questions and specific questions concerning the respondents’ data. This kind of research method was selected since an anonymous survey allows for more honest and unambiguous responses than other forms of research methodology, especially if it is clearly indicated that survey responses will be kept entirely confidential. The other reason was the difficulty in reaching the respondents in person and the high interview costs. Therefore, it was decided that the survey should be carried out using computer tools. This research was conducted using a questionnaire method based on the availability of respondents with the application of the CAWI technique (Computer-Assisted Web Interview).

To determine the minimum sample size of people included in this study, the sample size formula for a finite population was used [56,57]:

$$n = \frac{P(1 - P)}{\frac{e^2}{Z_{\alpha}^2} + \frac{P(1 - P)}{N}} \quad (2)$$

where:  $n$ —sample size,  $e$ —allowable error,  $N$ —population size,  $Z_{\alpha}$ —the value resulting from the used confidence level, where, for a 95 percent confidence level,  $Z_{\alpha} = 1.96$ , and  $P$ —the structure index reflecting the estimated proportion in the population.

This research was limited to adults only. When determining the minimum sample size, the worst assumption was made, namely, the structure index  $P$  of 50%, because the product  $P(1 - P)$  has the largest value for such a level of  $P$ . The maximum allowable error was 5%, and the confidence interval was 95%. The total number of respondents was 30,815,501 (according to the Central Statistical Office data, this is the number of adults in Poland at the end of 2022). For the above data, the minimum sample size is 384. However, eventually, purposive selection was chosen for this study in order to obtain a sample consisting of organic food consumers only. The first question in the survey questionnaire referred to whether the respondent was an organic food consumer. If the answer was positive, the respondent could continue answering the questions.

The survey was conducted between the beginning of January and the end of March 2023 on a group of 525 adults throughout Poland. As a result of this study, 516 correctly completed survey questionnaires were obtained, which were finally analyzed.

The respondents of this survey were dominated by women, constituting over 72% of the total sample size (Table 1), which is typical for this type of research because, first, women are mostly responsible for supplying their households with food. Second, they are

more willing to participate in surveys, especially concerning food and health. However, the purposive selection of the respondents resulted in the fact the sample cannot be considered representative.

**Table 1.** Demographic features of the respondents.

Specification	Share
Gender	
Men	27.71%
Women	72.29%
Education level	
Basic	0.78%
Vocational	1.36%
Secondary	61.82%
Higher	36.05%
Place of residence	
Rural area	40.50%
Town with less than 20,000 inhabitants	14.34%
Town between 20,000 and 39,999 inhabitants	7.95%
Town between 40,000 and 99,999 inhabitants	6.40%
Town between 100,000 and 199,999 inhabitants	2.71%
City over 200,000 inhabitants	28.10%
Number of people in a household	
One	8.53%
Two	21.12%
Three	19.38%
Four	26.94%
Five	14.15%
Six	5.04%
Seven	3.10%
Eight and more	1.74%
Number of working people in a household	
Nobody works	0.97%
One person works	14.53%
Two people work	50.19%
Three people work	22.48%
Four people work	8.91%
Five and more people work	2.91%

Source: own elaboration.

The majority of respondents were people with secondary education—they constituted almost 62% of all respondents. Every third respondent had higher education. Most respondents were residents of rural areas and the largest cities in Poland (over 200,000 inhabitants), constituting over 40% and 28% of the total respondents, respectively.

An important determinant of consumer behavior is household size, which affects the amount of income per person and, as a result, the purchasing power of its members, as well as the level of their expenses. The results show that most respondents (almost half) had households of 3 to 4 people. More than half of the respondents (50.19%) declared that



two people worked in their household, and about 2/3 considered their household's income situation good or very good.

### 3. Results

#### 3.1. Consumers of Organic Food and Their WTP

Identifying organic food barriers and actions to reduce them is crucial for further developing the organic food market. The presented research results allow us to conclude that, first, the high price of organic food is the main obstacle to purchasing organic food for the investigated respondents. The second barrier is the limited or difficult availability of organic products (Table 2). This is directly related to low supply and insufficiently developed sales channels for organic food, which, in turn, affects the price level of organic food. Despite the increasing assortment offered and the growing number of stores that offer organic products, the organic food market in Poland, compared with organic food markets in other European Union countries, is a constantly developing market.

**Table 2.** Barriers to purchasing organic food.

Specification	Total					Women			Men		
	1-Not Important at All, ..., 5-Very Important [%]					Mean	Median	Mode	Mean	Median	Mode
	1	2	3	4	5						
High price	6.17	10.49	20.99	16.67	45.68	3.85	4.00	5.00	3.74	4.00	5.00
Bad taste	29.63	23.46	22.84	9.26	14.81	2.56	2.00	1.00	2.65	3.00	1.00
Short expiry date	20.37	23.46	30.86	14.81	10.49	2.72	3.00	3.00	2.69	3.00	3.00
Narrow offer	20.37	18.52	30.25	21.60	9.26	2.81	3.00	3.00	2.65	3.00	3.00
Low availability	13.58	22.22	31.48	15.43	17.28	3.01	3.00	3.00	2.94	3.00	3.00
Little information on organic food	17.90	19.14	32.10	17.28	13.58	2.90	3.00	3.00	2.67	3.00	3.00
Low credibility	19.75	22.22	34.57	14.20	9.26	2.71	3.00	3.00	2.61	3.00	3.00
Unattractive appearance	33.95	22.84	24.69	9.88	8.64	2.36	2.00	1.00	2.28	2.00	1.00
I cannot recognize it	32.72	20.37	29.63	9.26	8.02	2.40	2.00	1.00	2.17	2.00	1.00
Poor promotion	26.54	17.90	31.48	12.35	11.73	2.65	3.00	3.00	2.33	2.00	1.00

where 1—not important at all, ..., 5—very important. Source: own elaboration.

As mentioned above, the respondents most often indicated high price as the main barrier to purchasing organic food (almost 46% of them assessed this barrier as very high) and low availability (over 17% considered it very important). These are barriers of a very market nature and may result from still low market maturity and insufficient support for the development of the market infrastructure.

However, the surveyed men and women ranked the specified barriers differently. Women gave the highest importance to price and low availability. In contrast, apart from price, men indicated insufficient information about this type of food as the main barrier, followed by poor promotion. Therefore, one remark can be made concerning the marketing tools and promotion strategy used—they should be more targeted at men since this research shows that men are not fully informed about organic food or the benefits related to its consumption, and also, the market information on product range, availability, and outlets offering organic food is insufficiently aimed at this group. In the future, these measures may bring an increase in demand for organic food since lately, men have been becoming more and more conscious consumers.

Factors related to the recognition of organic food, its credibility, or poor access to information about organic food were not significant barriers for the surveyed respondents

when making purchasing decisions. It can be concluded from the above that consumers (especially women who supply their households with food) are aware of the presence of this kind of food on the market and trust this food category.

The survey respondents were asked to indicate a factor (Table 3) that would contribute to the fact that organic food would be purchased more often. Lower prices (over 51% of all respondents) and higher earnings (less than 49%) were most frequently indicated as the most important in this context (regardless of gender). These factors are of an economic nature, so this supports the conclusion that most consumers are aware that there is organic food on the market, know how to recognize it, and are potentially willing to buy it, only it is not too expensive, especially during the crisis and inflation caused by the war in Ukraine and the coronavirus pandemic.

**Table 3.** Factors that would make organic food purchased more frequently.

Specification	Total					Women			Men		
	(in %)					Mean	Median	Mode	Mean	Median	Mode
	1	2	3	4	5						
Greater availability	6.79	9.88	24.69	22.22	36.42	3.72	4.00	5.00	3.70	4.00	5.00
Lower price	3.70	9.26	13.58	22.22	51.23	4.08	5.00	5.00	4.07	4.00	5.00
A wider offer	7.41	8.02	22.84	25.93	35.80	3.75	4.00	5.00	3.72	4.00	5.00
More accessible information about these foods	8.02	14.20	29.01	19.75	29.01	3.48	3.00	3.00	3.39	3.00	3.00
More ecological packaging	18.52	13.58	32.10	18.52	17.28	3.02	3.00	3.00	3.11	3.00	3.00
A wider range of convenience foods	11.73	13.58	22.22	27.16	25.31	3.41	4.00	4.00	3.39	4.00	5.00
Higher income	6.79	9.88	17.28	17.28	48.77	3.91	4.00	5.00	3.83	4.00	5.00
Market information regarding, e.g., sales places	11.11	15.43	28.40	19.75	25.31	3.33	3.00	3.00	3.32	3.00	3.00
Wider promotion	9.26	19.75	25.31	21.60	24.07	3.31	3.00	3.00	3.30	3.00	5.00

where 1—not important at all, . . . , 5—very important. Source: own elaboration.

Nevertheless, the investigated consumers also indicated a more comprehensive product range and greater availability as factors influencing their purchasing decisions concerning organic food. Contemporary consumers value their time and the possibility of purchasing all products quickly in one place without additional engagement; therefore, the shortage of specific products at the place of purchase may be considered low availability. Thus, it would be advisable for the outlets offering organic food to ensure a possible complete product range in one place because it may result in loyalty and increased demand among organic food consumers.

Most often, the use of more environmentally friendly packaging (over 18.5%) and the expansion of the offer of convenient food (less than 12%) were indicated by the respondents as being unimportant in this context.

As mentioned above, a significant number of those surveyed indicated the price of organic food as the main barrier to purchase and lowering the price as the main factor that would result in increased purchases of environmentally friendly products. Over 88% of respondents consider the price of organic food as being high (Table 4), and a much larger percentage of men (over 98%) than women (83.5%) perceive this type of food as expensive. This again proves the necessity to introduce and intensify promotion measures directed toward men to influence their perception of organic food, make them aware of why organic food is more expensive, and demonstrate in detail all the benefits related to its production and consumption.



**Table 4.** Assessment of the price level of organic food.

Specification	Total	Women	Men
Organic food is expensive	88.27%	83.49%	98.11%
Organic food is not expensive	11.73%	16.51%	1.89%

Source: own elaboration.

Of the seventeen product groups listed (Table 5), for only two—eggs and spices and herbs—less than 40% of respondents buying organic food rated them as expensive or very expensive (less than 39% and just over 35%, respectively). Meat, cold cuts, and fish and seafood were most often considered expensive or very expensive (62%, 61%, and less than 59%, respectively) and were perceived as more expensive by men than women—which was significant for almost all food categories.

**Table 5.** Assessment of the price level of specific organic food product categories (%).

Specification	Total						Women						Men					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Fruits	2.21	13.97	33.82	28.68	15.44	5.88	2.30	13.79	40.23	24.14	12.64	6.90	2.08	14.58	20.83	37.50	20.83	4.17
Vegetables	2.21	11.76	37.50	28.68	16.91	4.41	2.30	12.64	41.38	25.29	14.94	4.60	2.08	10.42	29.17	35.42	22.92	4.17
Fruit products	1.47	6.62	30.15	33.09	19.12	9.56	1.15	8.05	31.03	33.33	17.24	10.34	2.08	4.17	29.17	33.33	22.92	8.33
Vegetable products	1.47	6.62	34.56	30.15	16.91	10.29	1.15	6.90	36.78	33.33	13.79	10.34	2.08	6.25	31.25	25.00	22.92	10.42
Meat	2.94	5.15	19.12	28.68	33.82	11.03	2.30	8.05	20.69	26.44	31.03	12.64	4.17	0.00	16.67	31.25	39.58	8.33
Cold cuts	2.94	6.62	17.65	31.62	29.41	12.50	2.30	9.20	20.69	28.74	27.59	13.79	4.17	2.08	12.50	35.42	33.33	10.42
Dairy products	2.21	9.56	30.88	28.68	18.38	8.82	1.15	14.94	32.18	28.74	13.79	9.20	4.17	0.00	27.08	29.17	27.08	8.33
Eggs	3.68	12.50	36.76	18.38	20.59	8.82	3.45	16.09	39.08	17.24	14.94	10.34	4.17	6.25	35.42	20.83	29.17	6.25
Fish, seafood	3.68	2.94	19.12	22.79	36.03	16.91	3.45	4.60	21.84	21.84	34.48	18.39	4.17	0.00	16.67	25.00	37.50	14.58
Cereal products	5.88	12.50	33.82	27.94	12.50	8.82	4.60	18.39	36.78	26.44	9.20	8.05	8.33	2.08	29.17	35.42	18.75	10.42
Bread	2.21	13.24	27.21	22.79	23.53	11.03	1.15	19.54	31.03	19.54	19.54	11.49	4.17	2.08	18.75	29.17	31.25	10.42
Sweets, snacks	2.94	11.76	30.88	26.47	18.38	10.29	2.30	16.09	36.78	20.69	17.24	9.20	4.17	4.17	20.83	35.42	20.83	12.50
Spices, herbs	5.15	16.18	33.09	22.06	13.24	12.50	5.75	22.99	34.48	17.24	11.49	11.49	4.17	4.17	31.25	31.25	18.75	14.58
Tea, coffee	5.88	12.50	26.47	22.06	21.32	11.76	5.75	16.09	27.59	21.84	20.69	11.49	6.25	6.25	27.08	22.92	25.00	12.50
Vegetable fats (oils)	4.41	5.88	30.88	22.79	25.00	11.76	3.45	8.05	35.63	20.69	24.14	11.49	6.25	2.08	27.08	27.08	27.08	12.50
Honey	1.47	7.35	27.94	24.26	29.41	11.03	1.15	8.05	28.74	22.99	28.74	12.64	2.08	6.25	27.08	27.08	31.25	8.33
Baby food	5.88	8.09	23.53	18.38	22.79	21.32	6.90	10.34	26.44	17.24	22.99	18.39	4.17	4.17	18.75	20.83	22.92	27.08

1—very cheap, 2—cheap, 3—neither cheap nor expensive, 4—expensive, 5—very expensive, 6—no idea. Source: own elaboration.

The prices of eggs, cereal products, and spices were perceived as neither expensive nor cheap. Fruits, vegetables, eggs, cereal products, bread, sweets, and spices were assessed by the investigated consumers as not expensive (between 10 and 20%), which indicates that these organic products are more affordable for at least a segment of consumers and the assortment offered in these categories should be developed and made more available on the market.

Only less than 6% of those investigated considered the price of tea and coffee, baby food, and cereal products as very cheap. In the case of each of the specified product categories, a larger percentage of men than women rated them as expensive or very expensive.

The respondents were also asked to indicate the acceptable price difference between organic and conventional products (Table 6). Less than 2.5% of the respondents estimated that they would not be able to pay more for it (in the case of men, this percentage is more than twice as high). Every fourth respondent accepted the price difference between organic and conventional products to be lower than 10%, and over 37% would pay more if it was between 11 and 20%. None of the surveyed men accepted a price premium greater than

60% (in the case of women, such a price difference was accepted by approximately 5.5%). These results demonstrate that men are less willing to pay more for organic food, which, together with their perception of the price level, translates into the fact that they are less willing to buy organic food at prices offered on the market.

**Table 6.** Willingness to pay more for organic food compared with conventional food.

Premium Range	Total	Women	Men
1–10%	24.69%	22.02%	30.19%
11–20%	37.04%	35.78%	39.62%
21–40%	22.22%	23.85%	18.87%
41–60%	8.02%	9.17%	5.66%
61–80%	4.94%	7.34%	0.00%
Over 80%	0.62%	0.92%	0.00%
I am not willing to pay more for this food	2.47%	0.92%	5.66%

Source: own elaboration.

### 3.2. Price Premiums for Organic Food Products

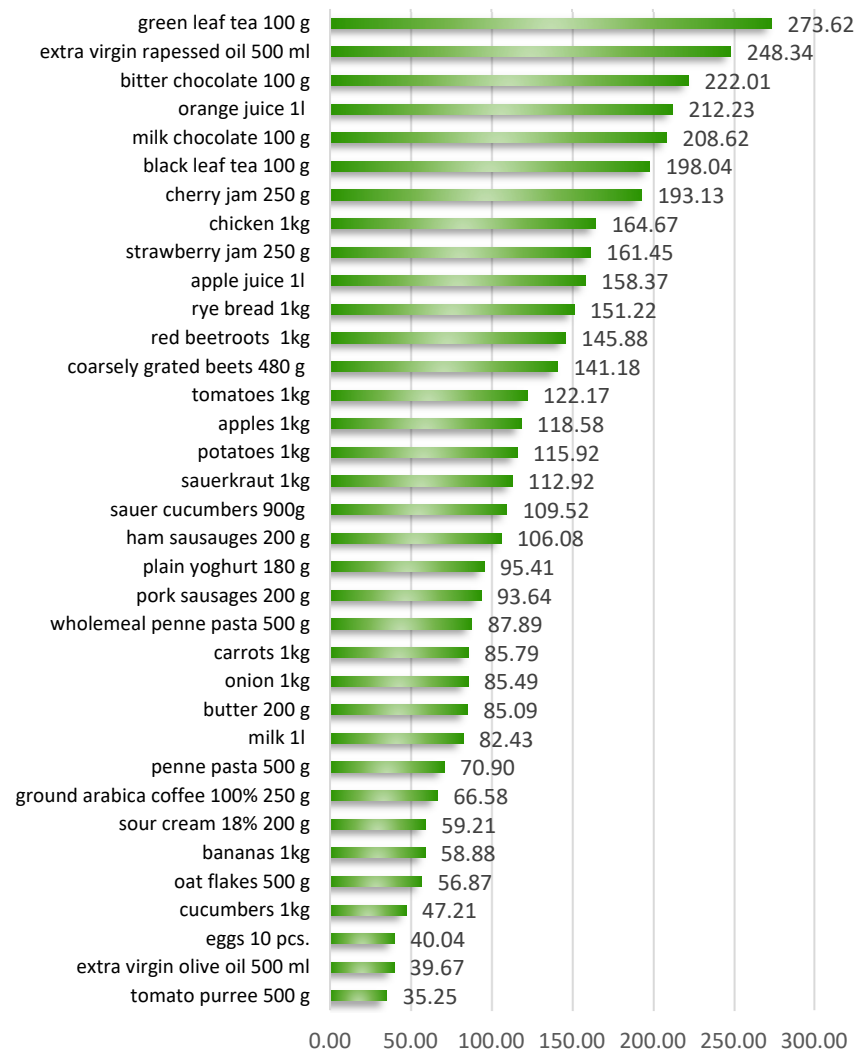
Throughout the investigated period, retail prices for organic food were higher than for conventional products. Extremely high price premiums (over 200%) were observed in green tea, rapeseed oil, bitter chocolate, and milk chocolate (Figure 1). They were very close to 200% for black tea and cherry jam. In the group with the lowest price premiums (lower than 100%), we found eggs, vegetables (cucumbers, onions, carrots), bananas, cereal products (pasta, oat flakes), tomato puree, dairy products (yogurt, milk, butter, sour cream) and, interestingly, coffee and thin dry pork sausages. Most of these products (apart from coffee and bananas) are grown and processed in Poland; therefore, their price is relatively lower. A reduction in price premium may be explicitly observed in the case of dairy products when compared with the previous research by Łuczka [36], in which the price premiums for dairy products were in the range between 130 and 255%. This fall in price is a result of the fact that big companies in the Polish conventional dairy market became involved in the processing of organic milk, which was followed by a decrease in the price of organic dairy products (previously imported to a large extent). Additionally, supermarket chains offer these products in this food category under their own private labels.

Relatively low price premiums were recorded for the cereal products because there are many small and large companies processing cereals that are involved in processing organic cereals for a more extended period. Moreover, the supply of raw materials is higher than in the case of other crops.

When comparing the declared consumer willingness to pay (WTP), considerable disproportions occur in the market between consumer price level acceptance and actual price premiums (Figure 2). Nearly 62% accepted prices not greater than 20%; however, none of the investigated organic food products were distinguished by the price premium in this range. In the range between 21 and 40% (suitable for 22% of the surveyed), there were two products only (tomato puree and olive oil). In the range between 41 and 60% (accepted by 8% of the surveyed), there were eggs, cucumbers, oat flakes, bananas, and sour cream, and in the following one (suitable for 5% of the respondents)—ground coffee and pasta. The vast majority of organic food products were in the range of over 80% accepted by less than 1%, which demonstrates that despite the awareness growth, consumer disposable income increase, organic market development, and moderate fall in price premiums, there are still huge disproportions between consumer WTP and the price level for organic food products on the Polish market. This clearly explains why the average Polish consumer spends about EUR 8 annually on organic food.

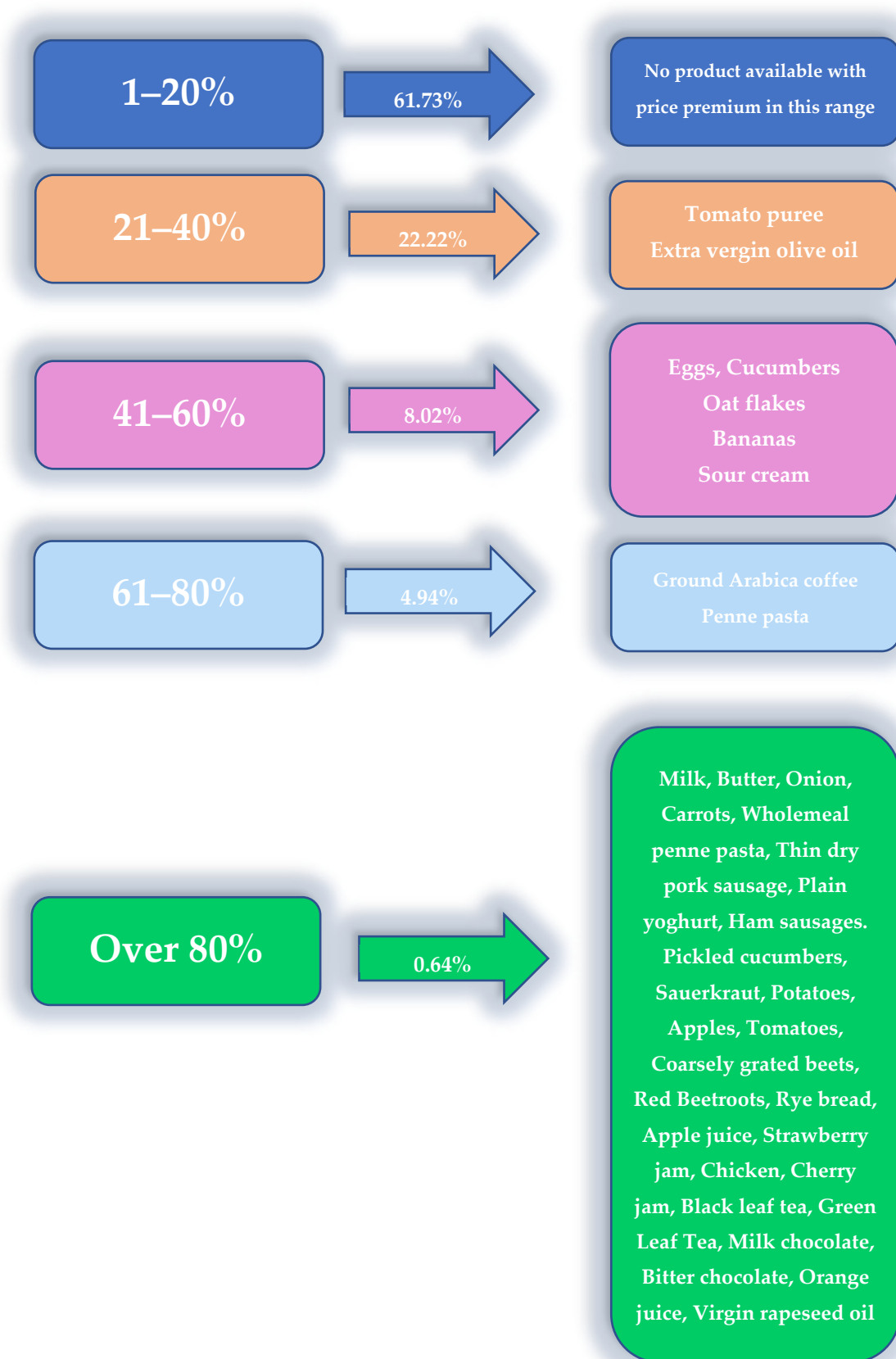
One can observe slow, positive changes in this area; however, they need to be supported to a greater extent, especially in the face of the necessity of achieving the Green Deal goals for organic farming in Poland. In order to encourage farmers to transition to organic

methods, a sufficiently developed market for organic food has to be supported to be able to take the organic produce and deliver it to the final consumer at an acceptable price.



**Figure 1.** Price premiums for organic food (%). Source: own elaboration.

It was also interesting to compare the perception of the price level and the price premiums for particular organic products (Table 7). Within the variety of the investigated products, meat and cold cuts were rated as the most expensive; however, the price premiums for this category were not the highest—they were between 94 and 165%. This opinion probably results from the fact that meat, in general, is currently very expensive. The second place was taken by fruit products, including jams and juices; the price premiums in these cases were between 161% and 212%. According to the respondents, the third place was taken by oils, in which the price premiums were very high for rapeseed oil and relatively low for olive oil offered by supermarket chains, frequently under their own private label. The perception of the prices of the remaining organic food categories was mostly coherent with the price premiums, with some exceptions for chocolate, tomatoes, red beetroots, and tea. The disproportions in the perception of price and current price premiums may result from the previous relationships between organic and conventional food, which have changed slightly due to the development of the organic food market. The second thing is that food is becoming increasingly expensive, which translates into its negative perception even to a greater extent in the case of some categories of organic food, e.g., meat and cold cuts.



**Figure 2.** Willingness to pay and price premiums for organic food. Source: own elaboration.

**Table 7.** The perception of prices and price premiums.

Product Group	Share of the Respondents who Evaluated the Given Organic Product Group as High or Very High (%)	Specific Product in a Given Product Group	Price Premium (%)
Eggs	38.97	Eggs 10 pcs.	40.04
Cereal products	40.44	Oat flakes 500 g	56.87
		Penne pasta 500 g	70.90
		Whole meal penne pasta 500 g	87.89
		Ground arabica coffee 100% 250 g	66.58
Tea, coffee	43.38	Green leaf tea 100 g	273.62
		Black leaf tea 100 g	198.04
		Apples 1 kg	118.58
Fruit	44.12	Bananas 1 kg	58.88
		Bitter chocolate 100 g	222.01
Candies	44.85	Milk chocolate 100 g	208.62
		Potatoes 1 kg	115.92
Vegetables	45.59	Onions 1 kg	85.49
		Tomatoes 1 kg	122.17
		Cucumbers 1 kg	47.21
		Red beetroots 1 kg	145.88
		Carrots 1 kg	85.79
		Rye bread 1 kg	151.22
Bread	46.32	Tomato puree 500 g	35.25
		Coarsely grated beets 480 g	141.18
		Sour cucumbers 900 g	109.52
		Sauerkraut 1 kg	112.92
Vegetable products	47.06	Milk 1 L	82.43
		Butter 200 g	85.09
		Plain yogurt 180 g	95.41
		Sour cream 18% 200 g	59.21
Dairy products	47.06	Extra virgin rapeseed oil 500 mL	248.34
		Extra virgin olive oil 500 mL	39.67
Plant oils	47.79	Strawberry jam 250 g	161.45
		Cherry jam 250 g	193.13
Fruit products	52.21	Apple juice 1 L	158.37
		Orange juice 1 L	212.23
		Chicken 1 kg	164.67
Meat, cold cuts	62.50	Ham sausages 200 g	106.08
		Thin dry pork sausages 20 g	93.64

Source: own elaboration.

#### 4. Discussion

Former consumer studies performed on the Polish organic food market show that the price level is still the most crucial factor in determining the size and structure of the demand and is perceived by Polish buyers as being relatively high [49,58–60]. This

conducted study confirms this conclusion, simultaneously indicating the significance of the availability of products in retail outlets and the access to information on organic food, wherein these barriers were a little less important for women than for men. Aschemann-Witzel and Zielke [61] also indicated that price is one of the barriers hampering the increasing demand for organic products. Similar results were obtained by Romanian researchers, who noticed that price is the main barrier to pro-environmental behavior [62]. A review of the literature on the willingness to pay a higher price for organic food products indicated a considerable variation in this indicator, i.e., from 0 to 105% depending on the market segment and product category; the average was 30% [61,62]. The previous research on prices of organic food carried out in Poland demonstrated that they are much higher than conventional food prices, which, due to low income, is not acceptable to 75% of the population [63,64]. Research by Hermaniuk [65] and Smoluk-Sikorska [59] showed that almost 90% of consumers would not accept a premium higher than 40%. These results are aligned with the results of this conducted research, where less than 14% of the respondents accepted a premium higher than 40%; however, a distinguishing feature of this study is the fact that men were less willing to pay more for organic food.

Swiss consumers are also not willing to buy organic food at high prices and prefer domestic products [66]. Research conducted in Western European countries and the USA shows that a relatively large percentage of the population is prepared to pay higher prices for organic food—in the range of 10–30%—with the upper limit set by a price not higher than 50%; nevertheless, organic food prices in Western European markets are 10–20% higher than those of conventional agriculture products [67–69]. In research conducted on the organic bread market in Scandinavian countries by Kihlberg and Risvik [70], the results show that the consumer, despite being aware of the taste and health benefits of organic bread, does not want to pay more for it than for a comparable product produced conventionally. More than half of the Scandinavian respondents declared that they do not buy organic products if there is a significant difference in price, despite health awareness, which is high in Scandinavian countries. Similar results were obtained by De Boni et al. [71] for Italian consumers, who are also not willing to pay high margins for organic products. German consumers living in rural areas and eastern states are characterized by a lower level of WTP for organic and local food products than residents of cities and other states [72]. A Spanish consumer study revealed that consumers were willing to pay a higher premium for meat, fruit, and vegetables, suggesting that they found perishable products to be more important organic attributes. In the case of meat, the rational reason could be partially because of the food and health issues (BSE, *E. coli* 0157 contamination) taking place in Europe [73]. Another study revealed that most Spanish consumers are willing to pay a higher price for organic wines [74]. Canadian consumers, on average, are willing to pay a price premium of at least 24% [75]. In Roitner-Schobesberger et al.'s [76] research, 60% of organic consumers did not see price as a limiting factor, and only 29% of non-consumers mentioned it as a reason for not purchasing organic food [77].

Concerning the price premiums throughout the investigated period, retail prices for organic fruits and vegetables were higher than for conventional products and also when compared with other countries, like Sweden [78], Germany [79], the United States [80], or Australia, where, for certain products, even negative premiums are noted [81]. Compared with previous studies on the price premiums for the Polish organic food market, the differences between organic and conventional food were still high; however, one may conclude that they were slightly reduced. In the research by Łuczka [48], Łuczka-Bakuła, and Smoluk-Sikorska [82], the premiums ranged from 51 to 335% and from over 34 to almost 324%, while in the conducted research, they varied from 35 to 273%. In Pawlewicz's study [47], premiums for organic eggs amounted to about 128%, while this research revealed 40% price premiums for eggs.



## 5. Conclusions

The prices of organic food are commonly believed to be high; therefore, they constitute the most significant barrier to the growth of demand for organic food. This thesis was confirmed in the conducted research; however, it also indicated other important problems in the organic food market. One of them is insufficient access to organic food products in retail outlets. This is related to the fact that contemporary consumers do not want to spend time shopping and would like to purchase all the products they need in one place. This creates a challenge for distribution channels, which is additionally influenced by consumers' becoming increasingly conscious and demanding. Thus, supermarket chains should be more involved in organic food distribution despite their former engagement growth in the organic food market. Their capability to create connections with producers and other suppliers could contribute to reducing costs in the distribution channel, which would translate into a fall in the organic food price level in retail.

Organic food prices are generally perceived as high or very high, and consumers' willingness to pay more for organic food is relatively low. The difference between price premiums and declared acceptance of organic food prices is significant. Estimating an optimal price is very difficult because, on the one hand, from the producers' point of view, they have to cover increased production costs and provide them with an appropriate income level. On the other hand, this price also has to be accepted by the consumers, for whom price is one of the most important factors in their purchasing decisions. It is worth highlighting that consumers differ in terms of their perception of organic products and their WTP. Therefore, the most appropriate approach would be to indicate a range for the organic food price. This study shows the most accepted range is up to 20% and between 21 and 40%. The second one is accepted by nearly one-fourth of the respondents, and simultaneously, will guarantee the covering of higher production costs, and hence, it seems to be the most appropriate.

The disproportion between the price premiums and WTP could also be reduced by promoting organic food, highlighting the benefits resulting from its consumption, and simultaneously considering that women's perceptions and attitudes toward organic food are more positive. Thus, even though women are still mostly responsible for household food supplies, it should be considered that, first, the traditional division between men's and women's roles and functions has changed, and second, the number of single-person households has increased.

There is a positive occurrence in the organic food market in Poland—decreased price premiums for most investigated products have recently been observed. This reduction results from the latest development of the market and the above-mentioned growth in the importance of retail chains in the distribution sphere. On the other hand, the fall in price premiums proves that the undertaken activities supporting the organic market development, however slowly, bring some results and should be continued. They might result in a reduction in price premiums, which would contribute to higher consumer interest and what follows—the demand for organic food. This can be observed in more mature markets, like in Western European countries, which are characterized by well-developed market infrastructure, efficient distribution channels, and dense networks of links, both horizontal and vertical, between producers and distributors, which results in lower price premiums and lower relative price for the final consumer. Therefore, it should be assumed that the disproportion between price premiums for organic food and willingness to pay a higher price will gradually decrease. This process will occur along with increasing consumer income and environmental awareness [83–85].

One of this study's limitations in the identification of price premiums was the lack of current data on the prices and value of the organic food market. The functioning system for collecting these data is based solely on estimated information. The other limitation of the undertaken study on organic food prices is the fact that it was carried out for only nine months and covered retail outlets located in the Poznań agglomeration exclusively, which

was dependent on the funds obtained for this study. Further research should cover a longer period and retail outlets in the biggest agglomerations in Poland.

The main limitation in the area of this consumer study was the lack of representativeness of the sample size, which resulted in the fact that more general conclusions for the whole population of Poland could not be drawn. Therefore, future consumer research should be based on different methods (e.g., random selection of the sample). Also, other barriers to organic food purchases, such as habits, skepticism of organic food labels, lack of knowledge, and availability, should be considered in more detail. This will provide a more comprehensive understanding of the influence of situational factors and the attitude–behavior gap.

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