
Financial and Marketing Purchase Conditions of Organic Baby Food

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Abstract:

Purpose: The aim of this study is to present and evaluate the attitude of Polish parents towards the purchase of organic food for babies, particularly including the impact of VAT on their purchases.

Design/methodology/approach: The study used the method of survey research with the use of an online questionnaire. The results were statistically analyzed and subjected to the chi square test.

Findings: As a result of the conducted research, the most important conditions, shopping habits, motives and attitudes of parents towards ready-made baby products available in Polish stores were revealed.

Practical Implications: The results of the study could be useful for suppliers of organic food for babies in Poland in introducing marketing strategy. It could be also useful for government when creating new rates for VAT.

Originality/Value: The level of knowledge of Polish parents regarding the labeling of organic food was also revealed. The attitudes of Polish parents towards the purchase of organic food dedicated only to infants were presented and assessed. Parents expressed their views on the current and preferred VAT rate for baby food products.

Keywords: Polish consumer behavior, value added tax, organic food market.

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1. Introduction

In Poland, the organic food market has already developed enough to offer the youngest consumers products from certified farms and homestead. One should take into account not only vegetables and fruits, but most of all, ready meals and desserts available in the Polish supermarkets in a very wide range of products and brands.

There are many conditions for the purchase of organic food by Polish consumers. One of them is the financial aspect manifested in the high price of a certified organic food product. To a certain extent, the price of a product is also formed by the value of tax on goods and services. The aim of this study is to present and evaluate the attitude of Polish parents towards the purchase of organic food for babies, particularly including the impact of VAT on their purchases.

The method of survey research with the use of an online questionnaire has been applied in the study. The results have been analyzed statistically and subjected to the chi square test.

2. Literature Review – Organic Food

Organic or biological farming is a system of agricultural production based on making use of the natural processes occurring within an agricultural farm. It is allowed to use technical achievements which can be applied in a farm, provided that the general rules of pro-environmental conduct are taken into account. Organic food is produced according to strictly defined and included in regulations principles of organic agriculture.

As early as 1991, provisions concerning detailed recommendations in the production, processing and labelling of food originating from organic farms were incorporated into the Codex Alimentarius. Relevant provisions have been introduced by the EU Member States, including Poland. Food obtained by means of this system should be characterised by specific features distinguishing it from food obtained by using industrial methods. In the production of organic food, no chemical agents, i.e., synthetic fertilisers, various pesticide, growth hormones or antibiotics etc. are used. In addition, the process of food production is tracked, controlled and fully documented “from a farm to a fork”. It is the producer and the entity controlling the process of production that are fully responsible for the quality of food. Organic food has specific qualitative features (Banach *et al.*, 2018).

Organic food is a category of food products produced by means of ecological farming (organic, biological, biodynamic), that is, an ecologically, economically and socially sustainable management system based solely on natural methods of production. Through the stimulation of natural mechanisms of production, it creates conditions for nurturing, enhancing prolificacy and improving fertility of soil, contributes to ensure the healthiness of plant, animal organisms and makes it

possible to obtain the high quality agricultural products. The credo of this type of farming is giving up the use of agricultural chemicals for the sake of biological, mechanical or agrotechnical treatment (Angowski and Bujanowicz-Haraś, 2019).

The main goals of organic farming are (Kacprzak and Wielecka, 2019):

- production of food with high health and nutritional values,
- use of natural resources in a way that protects biological mechanisms and regulates the functioning of natural systems,
- regulation and maintainance of biological cycles inside the farm,
- maintainance of soil fertility,
- ensurance of proper living conditions for farm animals,
- minimising of environmental degradation,
- use of renewable natural resources in agricultural production,
- care about keeping high biodiversity on the farm and its close surroundings (genetic wealth).

In the food economy sector, an important part of sustainable consumption is organic food whose production is based on natural production measures and low amounts of external inputs. The greater is the consumption of organic food, the smaller is the environmental burdens. Growing interest in organic food and demand for it is an important change in the behavior of Polish consumers which has been observed in the last couple of years. Organic food consumers form a stable and distinctive segment of the market. Their attitudes and behaviors reflect the growing health and environmental awareness, the changing market, availability and quality of products. However, these are the characteristics of a minor part of consumers. Hence, although consumer interest in organic products has been growing, organic product markets continue to be in a niche (Łuczka, 2019a).

The quality of organic products depends on numerous factors, mainly related to the methods of production that are used and the cleanliness of the place of breeding and cultivation. An important factor which influences the processing of organic products is a small amount of artificial additives such as sweeteners, flavors and colors, synthetic fatty acids, and the greater amount of both minerals and vitamins. Many factors, among which abiotic aspects are of great significance and have an influence on the quality of organic products. The guarantee of high quality is the soil, groundwater and surface water that meet certain quality parameters (Kułyk and Dubicki, 2019). Cardinal importance is attached to the recognisability of organic products, so-called a small green leaf (an organic logo of the EU), which is a guarantee that a product has been manufactured in accordance with the European Union law relating to organic production (Nycz, 2020).

The organic food market is created by its producers and its consumers, so people are aware of both their own and other needs in terms of the quality of food they eat. The

growing interest of societies in organic food is not only the result of contamination of conventional food, but also an expression of new consumption preferences related to a higher quality of life (Łukasiński and Pastuła, 2018). From 2004 to 2015, the size of the European organic food market doubled, reaching EUR 22.8 billion, which translated into retail sales of organic food worth EUR 35 per capita.

Organic products are often perceived as being more environmentally friendly, more trustworthy, subject to stricter control, healthier and tastier than commercial food. In recent years, Poland has experienced a rapid development of organic food production, especially after the accession to the EU. The most important distinctive features of organic farming include: the exclusion of GMOs and chemicals from production and processing and farm inspections to check compliance with organic production criteria. Organic food is perceived as safe, healthy and highly nutritional by consumers (Doba *et al.*, 2019).

All the limitations and increased quality requirements affect the size of agricultural production. The arable fields are smaller than the conventional ones, and the yields per hectare are smaller. Therefore, farmers are more often market participants whose acreage is relatively small. The retailers of this type of food also differ. When analyzing the food market in general, it is possible to list, among others, large-format stores, supermarkets, small-store chains or small local stores.

However, the sale of organic food in Poland is accumulated mainly in small, specialized stores. In 2017, sales in this type of shops accounted for 51% of the total sales of BIO food in Poland. It is true, that BIO product avenues in large-format stores have developed dynamically, but they are often focused on private, own labels of these supermarkets (Strużyna, 2020).

To take organic food processing into account, it is necessary to mention that it is subject to requirements defined in the EU regulations. Currently, Council Regulation (EC) No 834/2007 of 28th June 2007 on organic production and labelling of organic products and Commission Regulation (EC) No 889/2008 of 5th September 2008 that lay down detailed rules for the implementation of Council Regulation No 834/2007 are in force. These regulations refer to such terms as “natural” and “the restriction of the use of external inputs.” It results in the prohibition to use the methods based on the application of chemicals and significantly in the limit of using additives in processing by excluding substances and technological processes which could change the primary features of the product.

Additionally, it is emphasized that all the stages and actions in the production chain should be proceeded with care. It is particularly difficult to achieve, when one company runs both organic and conventional processing simultaneously. In such cases, special care should not be only taken to separate raw materials or products temporarily and spatially, but equipment used in production, which should be supported by keeping a register of all the realised operations, should also be

monitored continuously. Therefore, both the production and processing of organic food is particularly complex and labour-consuming. It should be underlined that each organic food processing company, like farms, has to go through a certification process in order to be able to mark products with the EU organic farming logo (Smoluk-Sikorska, 2019).

According to Codex Alimentarius, IFOAM standards and the EU regulations, organic food processing acquires a raw material from natural rather than from synthetic sources and, moreover, minimal processing is applied to fresh food, appropriate and careful methods are used for further processing. Careful processing refers to care taken with the raw materials used during the act of processing, in such a way that they maintain their integrity as far as possible, that all the vital substances (all the known nutrients) are protected and maintained where they are deemed beneficial to human health, and/or enhanced by the process, improved upon. In a broader meaning, careful processing also refers to other aspects such as inputs and outputs, people involved in the processing, as well as any biotic and abiotic factors.

Considering the processing itself, processing companies are obliged to identify the critical stages of processing continuously and to introduce adequate procedures to ensure processed food safety. Organic processors are obliged to apply adequate precautions in order to avoid contamination with prohibited substances. Suppose in a given organic food processing company, non-organic products are also processed or stored, in that case, they must be timely or spatially separated, and the production line must be cleaned carefully (Smoluk-Sikorska, 2021).

3. Literature Review – Consumers' Behavior

Organic food and bio products are often perceived as environmentally friendly, healthy and better in taste than conventional food. The development of organic food and bio products market constitutes an element of a far more complex phenomenon of environmentally friendly consumption. We observe a dynamic growth in the value of organic food market in developing economies. From 2004 to 2012, the size of the European organic food market doubled, reaching 22.8 billion EUR.

However, it was still a relatively small segment of the entire food and drink retail turnover (Musova *et al.*, 2018). In the world, during the last decade, many investigations have been conducted to study the willingness of consumers to pay a premium price for various ecological products. Thus, according to a global survey made by the company Nielsen, over 30 thousand consumers in 60 countries in 2015, 66% of respondents were willing to pay more for ecological products, an increase of 11% compared to 2014 and a 16% increase over the same indicator in 2013. Most of all, the Millennial Generation is ready to pay extra – almost 73% of respondents.

The ecological susceptibility has the ability to influence the purchase of an ecological product for 45% of surveyed consumers. The willingness of the US

consumers to pay a premium price for ecological products is growing, albeit slowly. Thus, according to a recent study by Growth from Knowledge 25 thousand consumers, found that 56% stated their willingness to pay more for ecological products in 2017, which is 3% more than in 2010. Almost half of respondents (49%) are now „some” or „basically” agree that they are ready to give up convenience in exchange for environmentally safe products, which is 3% more. About 49% (somewhat or mostly) agree that the company environmental image is important to them when making purchasing decisions, but only 1% more than it was in 2010 (Kucher *et al.*, 2019).

According to research carried out in Slovenia, the main barrier to increase the share of organic products in the market is the shortage of information among consumers. A similar assessment was made a few years earlier in Spain - consumers did not have enough information about the characteristics and methods of organic food production. In Turkey, the level of consumer awareness of organic food is also quite low and depends on education and income.

Due to the low level of consumer awareness, there is a risk of being misled by producers of conventional food. Research conducted among Slovakian organic food producers shows the insufficient use of marketing communication tools and new distribution channels such as a sale in vending machines. European preferences of consumers connected with organic food choices are evolving from altruistic values to more selfish motivation such as promotion of health, nutritional aspects and sensory properties. The most important reasons for buying organic food in Croatia and Slovenia are healthy values and concern for the environment, while in Bosnia and Herzegovina it is the idea of returning to nature, health and safety of this type of food. Health that is perceived also constitutes the most important factor in choosing organic food products in India.

The most important reasons for choosing organic food products in Poland are their healthy properties, ecological character, safety for consumption, taste and quality guarantee. The key role of health in the process of defining organic products have also been noted in a survey among grocery store managers. Moreover, according to the Polish producers of organic food, the competitive advantage of their offer mostly depends on healthy values. These results indicate the fundamental role of emphasizing healthy properties in the development of the organic food market in Poland. It should also be underlined that quality labels play an important role in the positioning of organic food in the premium segment, building a competitive advantage based on a differentiation strategy and emphasizing authenticity (Bryła, 2018).

Organic food is available in Poland in approx. 800 specialist stores and approx. 4 thousand stores belonging to retail chains (super and hypermarkets, discount stores and drugstore chains). Many of the retail chains have their own organic food brands, such as Tesco Organic, Carrefour Bio, Go Bio Biedronka, Biotrend Lidl, Rossman

Ener Bio. In specialized stores, organic food accounts for approx. 50% of the whole assortment.

However, in the largest supermarket with organic food - BioFamily Supermarket - which offers 5,000 products, 100% of the assortment has an ecological certificate. The increase in the share of organic food sales in large-format stores (super and hypermarkets or discount stores) leads to an increase in the availability of these products, especially in the case of customers who buy organic food occasionally. Moreover, the intensification of sales in modern distribution channels has caused that the prices of organic food in relation to conventional food are no longer as high as they were several years ago, which means that in the future two of the main barriers to the growth of the organic food market may lose their importance (Nestorowicz and Pilarczyk, 2018).

The infrastructural shortcomings of the organic food market affect the organic food production chain, from a farmer to processing, distribution agents and consumers. The chain has severe deficiencies in connections. Sale channels for ready-to-eat organic products are underdeveloped, so the same situation is with the organization of deliveries, purchases, storage and processing. On the production side, there are farms with a weak market power. The excessive dispersion of production locations causes difficulties in selling agricultural products, which is the most common reason why farmers abandon the idea of running an organic farm; on the other hand, this is the underlying cause for the poorly developed wholesale market which plays an important role both in supplying the domestic market and with respect to the prospective growth of organic food export (Grzybowska-Brzezińska and Gorłowa, 2019).

Publications on consumer behavior examined the components of purchasing decisions such as: knowledge and perception of organic food, motives for choosing it, frequency of purchasing, place of purchase, assessment of product range availability, price level and price relationships. The review of research on demanding factors of development of the Polish organic food market suggests that the authors gained relatively deep insight into the general perception of organic food by Polish consumers and the motives for purchasing it. The last 15 years gave witness to an improvement in the positive perception of organic food and an increasing share of consumers who appreciate its attributes.

Respondents usually associated organic food with characteristics that provide individual (rather than social or environmental) benefits. Most consumers believed organic food to be healthy, safe and of a high quality. Taste qualities and environmental concerns were also important, though less. Focus was directed on the issue of insufficient knowledge about organic food and its labels, and on factors that made it more recognizable. Besides having an effect on its perception in a broader environmental and social context, a better knowledge about organic food could also cause an increase in its consumption.

A poorly addressed issue in the studies is the perception of organic food in the context of promoting the protection of the environment as a public good, especially including climate protection, preserving biodiversity and ensuring animal welfare. The above is also confirmed by the motives for purchasing organic food (Łuczka, 2019b).

One of the most complex problems which affects the organic food market is the price level. The organic-to-conventional price ratio is high, reaching 300% in extreme cases. Consumer decisions on price acceptance influence the relation between the costs and benefits of a product. In the case of organic food, the benefits are of a tangible and intangible nature; they affect not only the vitality of consumers, but also the natural environment, the condition of organic farms, the local economy etc. The costs are mostly the higher price paid for the value added, as well as the alternative cost incurred to travelling to specialized organic food stores, and the lost benefits related to lower sensory value.

This is why willingness to pay a higher price, although economic in nature, is also related to the consumers' environmental and social awareness. The consumers' willingness to pay (WTP), defined as the maximum price that a buyer is willing to pay for a good, depends on product type, market maturity, and the consumers' environmental awareness and purchasing behavior. Informed and regular consumers of organic food exhibit the highest levels of WTP (Łuczka, 2019a).

As a national research has presented, the Polish consumers expect to increase the supply of manufactured and offered eco-products, especially dairy products, fruit and vegetables, honey, herbs, cold meats and bread. The changing and increasingly complex expectations of modern consumers in relation to the product and its attributes pose new challenges for the developing organic food market in Poland. The concept of creating new products is aimed to search the current needs of the consumer in order to create a product offer in line with current trends by the economic entity. It is the consumer who decides if the product will be accepted on the market. It plays a fundamental role in each of the stages of a product design, both in the area of initiating the process of its development, testing, and implementation into production and sales. Knowing the expectations of consumers is a key element in designing new products (Radzyńska *et al.*, 2018).

Undoubtedly, the use of marketing in the organic food market gives the market a lot of benefits, and the right choice of marketing instruments largely depends on people to whom they are directed. According to the level of ecological awareness, which affects consumers' behavior and demand for organic products, the following types of consumers can be distinguished:

- black consumers - have low levels of environmental awareness, lack of knowledge about environmental relationships, and believe that an individual consumer behavior does not affect the ecological balance; make purchases

by advertising, choose non-durable, disposable and toxic products; typical for these consumers is the inefficient use of energy, water, gas and other resources;

- grey consumers - their level of involvement in an environmental protection is low, they are convinced that the current environmental protection system is not sufficient and these improvements should be left to public institutions, so they believe that individual consumer behavior does not influence the state of the environment; their environmental awareness is at an average level, they seldom buy ecological products, usually under the influence of random information and tend to buy the same products as black consumers; they save resources for economic reasons;
- greyish green consumers - they have a high level of environmental awareness, buy environmentally friendly and health-oriented products, are driven by snobbery, rarely test the credibility of product information; save resources for economic, health or snobbish reasons;
- green consumers - have a very high level of ecological awareness; they buy environmentally friendly products of the highest quality in ecological packages; consider that the environment is one of the main factors affecting human health; use resources economically (Kułyk and Michałowska, 2018).

When focusing on trust for a moment, it is worth noting that Poles belong to nations that rarely trust other people. This fact applies to both business partners and people from the private surrounding. Unfair practices of some food producers or the use of food additives certainly do not contribute to the increase in the level of trust. These are examples of the negative phenomenon observed in the markets where there is asymmetry of knowledge and information – being tempted by moral hazard, i.e. the tendency to act in a dishonest and undesirable way.

The moral hazard concerns entities that are better informed, have a greater knowledge resources, and that cannot be controlled adequately. The abuses refer to, inter alia, informing consumers about the certificates, awards or medals held and markings used on packaging that may mislead the consumer (including the name of the product suggesting that it is a different type of product, product ingredients, minimum durability, manufacturing methods, suggesting specific product properties which it does not have, quantity or origin of the product) (Nestorowicz, 2018).

To get to know the detailed characteristics of the segment of people who buy and do not buy organic food, an analysis has been carried out in terms of education, age and net revenues of the respondents. Consumers of eco-food are people with a secondary (25.6%) and high education (21.6%), aged 26-45 years (29.9%), with revenues 1501-2500 PLN (18.4%). Whereas the group of respondents who do not consume bio-food is also characterized by secondary (19.2%) and high education (16%). They are young people at the age of 18-25 (15.2%) and with reasonable revenues (14.1%). In the group of people with the lowest revenues, there are definitely fewer consumers of organic food (6.2%), similarly is in the next range of PLN 1501–2500

(10.8%). It is worth noting that people who have never bought bio-food so clearly dominate only in the youngest age group. Perhaps it results from the fact that they lack experience in shopping or are hostile to this type of goods.

The profile of organic food consumer has also been analyzed in terms of knowledge of the organic logo, perception of the price level and the favoured promotion form of organic products. Among those who have ever bought organic food, definitely the largest number of respondents admit that they do not know the organic logo (18%), only 12% recognize the sign correctly, and 14% indicate the nonobligatory labelling of organic food. In the group of people who are not consumers of organic food, 26% are people who do not recognize the organic logo, and only 4% manage to correctly assign a sign to organic food. Among the consumers of organic food, in most cases there is a belief that the price level in the market is high (23%) and average (21%). Whereas people who do not buy organic food also think that prices are high (19%) and 16% have not expressed their opinions. Very few respondents consider organic food prices as too low (Jarczok-Guzy, 2018).

4. Research Results

For the purposes of this study, a questionnaire survey was conducted among parents of infants and young children from the Silesian Voivodeship. For this purpose, a questionnaire with 15 closed and semi-open questions was used, which was published on social media on Facebook devoted to advice about the upbringing and taking care of children. Intentional sampling was used. 144 completed answer sheets were obtained and analyzed by the use of Excel. The results are illustrated below in the form of graphs.

4.1 Characteristics of the Research Sample

Due to the specificity of the topic - the nutrition of young children, especially infants, the questionnaires have been filled in eagerly by women, who most often buy food for their children. Most of the respondents are rural residents (54.2%) and people with higher education (62.5%) aged 26-35 (54.2%). Half of the respondents represent families with one child. On the other hand, the prevailing ranges of net income per person in the family are at the level of PLN 1,501-2,000 (33.3%) and PLN 1001-1500 (29.2%). The remaining figures are presented in Table 1.

Table 1. Characteristics of the research sample

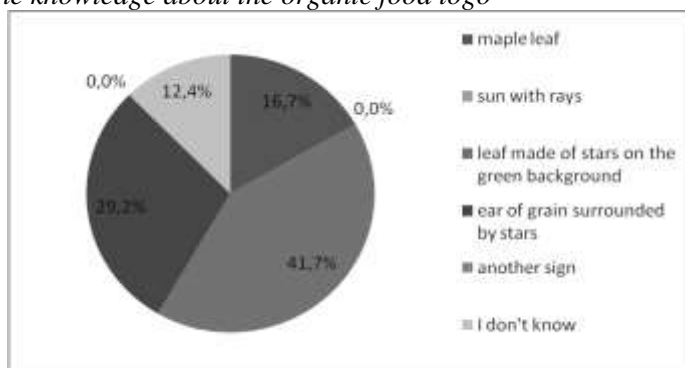
Feature	Data in %
Place of living	
Village	54,2%
City to 100 000 citizens	25,0%
City up to 100 000 citizens	20,8%
Education	
Primary	4,2%
Junior high school	0,0%

Vocational	0,0%
Secondary	33,3%
Higher	62,5%
Age	
18-25	16,7%
26-35	54,2%
36-45	12,4%
46 and more	16,7%
Number of children in family	
1	50,0%
2	29,2%
3	20,8%
4	0,0%
5 and more	0,0%
Net income per person in the family	
0-500 PLN	0,0%
501-1000 PLN	16,7%
1001-1500 PLN	29,2%
1501-2000 PLN	33,3%
Above 2001 PLN	20,8%

Source: Own elaboration based on research.

Most of the respondents associate the organic food logo with a leaf composed of stars on the green background (41.7%). This result clearly indicates that a large proportion of mothers who have participated in the survey consciously buy certified organic food, correctly recognizing the label. For a large group of respondents, an ear of grain surrounded by stars is a certified organic food logo (29.2%). Since 2010, it has not been the logo within the European Union any longer, but as one can see, it remains in memory of the questioned families. The remaining indications are presented in Figure 1.

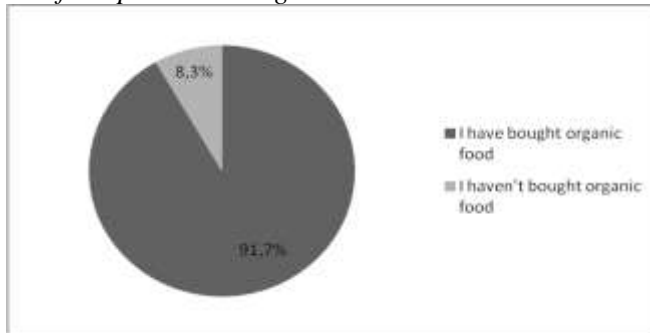
Figure 1. The knowledge about the organic food logo



Source: Own elaboration based on research.

In the next question, the vast majority of respondents declare that they purchase organic food for their family members (91.7%). The remaining part does not make such purchases - it is 8.3% of the research sample (Figure 2).

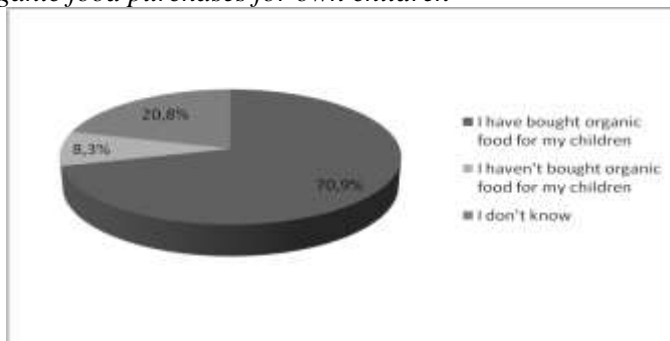
Figure 2. Organic food purchases in general



Source: Own elaboration based on research.

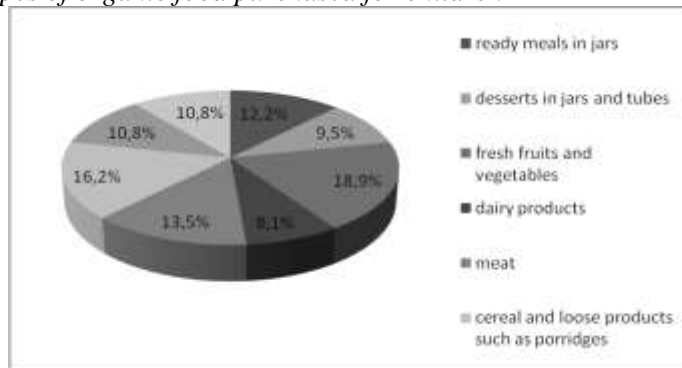
The third question concerns the purchase of organic food for own children and infants. Parents have been asked if they make such purchases. As many as 70.9% of parents admit that they buy organic food for their children, and only 8.3% do not. 1/5 of the respondents indicate that they do not know whether the food they buy is organic or not (Figure 3).

Figure 3. Organic food purchases for own children



Source: Own elaboration based on research.

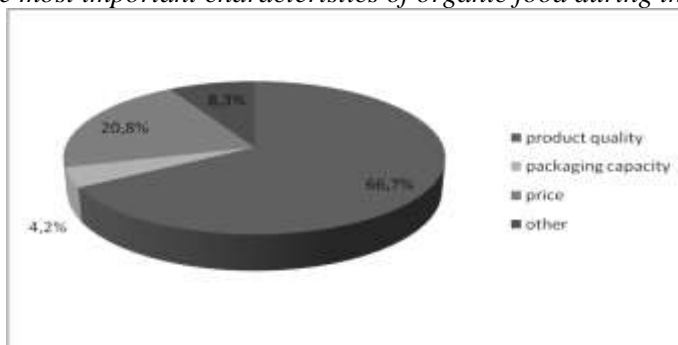
Figure 4. Types of organic food purchased for children



Source: Own elaboration based on research.

The answers to the next question show that the most frequently purchased organic food products are fresh fruit and vegetables (18.9%) as well as cereal and dry products (16.2%). Organic meat is an equally important element of the children's diet (13.5%). 12.2% of all the indications are ready meals in jars. The distribution of all the answers is shown in Figure 4.

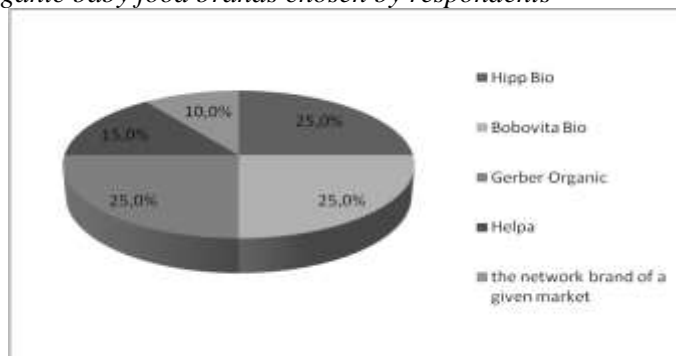
Figure 5. The most important characteristics of organic food during the shopping



Source: Own elaboration based on research.

In the next question, the respondents have indicated the most important features that guide them when buying organic food. Product quality receives the greatest number of indications (66.7%). 1/5 of indications is the price (20.8%). The distribution of the rest of the answers is shown in the figure 5. In the context of organic food for such a special group of consumers as the infants are, a separate question has been asked. Parents indicate which product brands they choose among organic food available on the Polish market for their youngest children. Three brands available on the market in the largest number of points of sale, i.e HIPP Bio, Bobovita Bio and Gerber Organic have turned out to be the leading brands among the choices of mothers. Each of them receives 25% of responses. The distribution of all answers is shown in Figure 6.

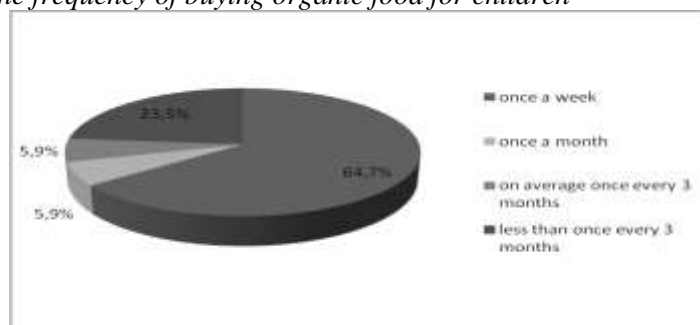
Figure 6. Organic baby food brands chosen by respondents



Source: Own elaboration based on research.

The respondents have also been asked to determine how often they buy organic food for their children. The indications of the majority of parents (64.7%) who declare that they buy organic food for their children once a week should be assessed very positively. The rest of the respondents makes purchases much less frequently. All the answers are presented in Figure 7.

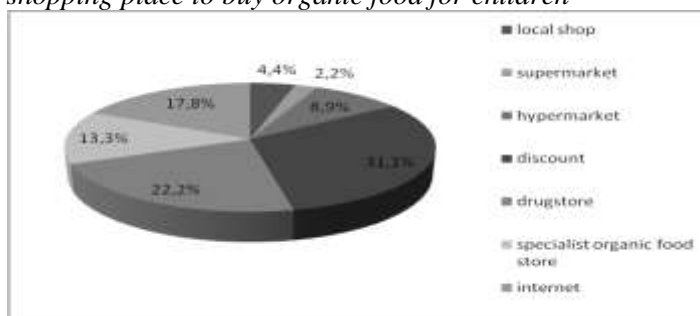
Figure 7. *The frequency of buying organic food for children*



Source: Own elaboration based on research.

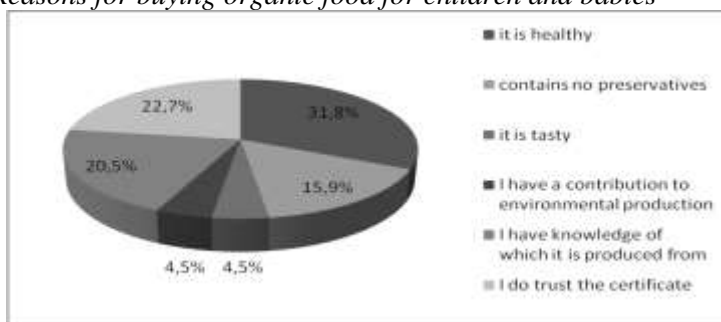
In the further part of the survey, participated in the survey mothers have defined the favourite place where they purchase organic food for their children. It turns out that these are discount stores (31.1%) and drugstores (22.2%). A large number of responses concerns online purchases (17.8%). It is clearly noticed from these indications that parents do not spend time looking for specialist stores with organic food, and make purchases for the whole family in one place (Figure 8).

Figure 8. *A shopping place to buy organic food for children*



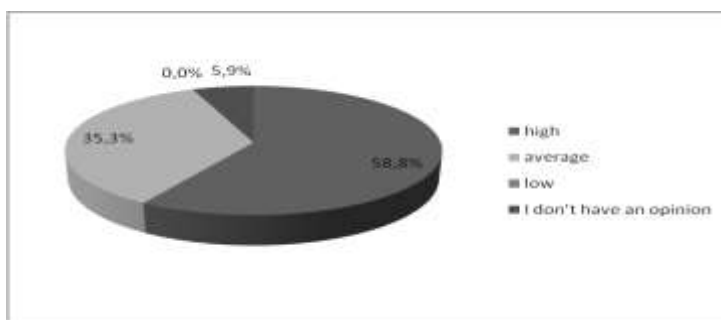
Source: Own elaboration based on research.

In the next question parents have indicated the reasons why they buy organic food for their children and babies. Most of mothers have declared that the most important reason for such purchases is the presumption that organic food is healthy (31.8% of all the responses). Confidence in the certificate (22.7%) and own contribution to an environmental protection (20.5%) are also important issues for making decisions to buy organic food. The remaining answers are shown in Figure 9.

Figure 9. Reasons for buying organic food for children and babies

Source: own elaboration based on research.

As in the case of organic food in general and also of organic food for children and infants, the respondents assess the price level in Poland as high (58.8%). Also, a large part of the respondents describe the level of prices as average (35.3%). All the answers are shown in Figure 10.

Figure 10. Assessment of the price level of organic food for children and infants in Poland

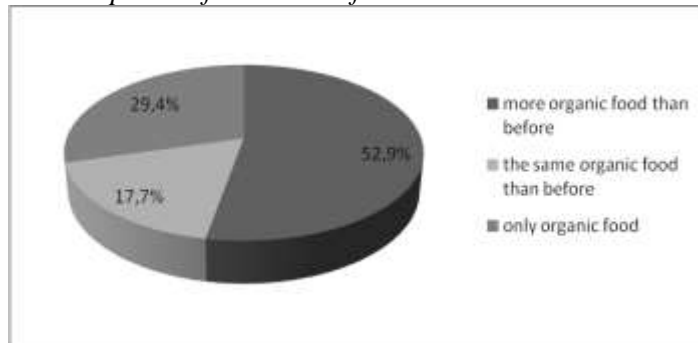
Source: own elaboration based on research

The answers to the question referring to the assessment of price level have been reflected in the next question, where the respondents have declared their purchasing behavior, assuming that the prices of organic food would be equal to the prices of traditionally produced food. More than half of mothers who have been surveyed (52.9%) would like to buy more organic food than before. Almost 1/3 of parents declare that they would only buy organic food (29.4%). Figure 11 presents a graphical illustration of all the responses.

The respondents have also been asked about the forms of promotion that would encourage other parents to buy organic food for their children. According to the respondents, the most desirable form would be a reduced price (37.3%) and a price reduction when buying more food (23.5%). These responses also confirm that the biggest obstacle in purchasing organic food for children is the high price of this type of product on the Polish market. The answer: Parents' recommendations has also

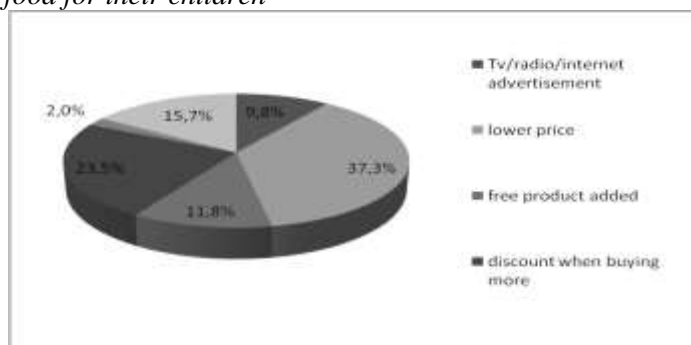
received a large number of responses (15.7%). The remaining answers are shown in Figure 12.

Figure 11. Purchase of organic food on the assumption that the prices of organic food are equal to the prices of traditional food



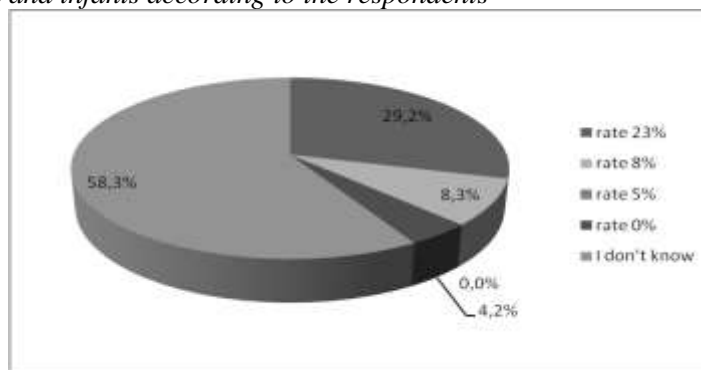
Source: Own elaboration based on research.

Figure 12. Forms of promoting organic food that would encourage other parents to buy organic food for their children



Source: Own elaboration based on research.

Figure 13. The currently applied rate of tax on goods and services for organic food for children and infants according to the respondents



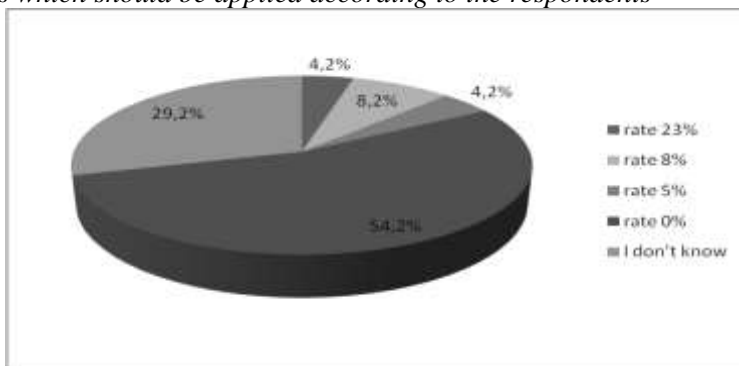
Source: Own elaboration based on research.

The next two questions refer to the respondents' knowledge about the rates of tax on goods and services applied to organic food for infants and children. Unfortunately, over half of mothers (58.3%) do not know what is the rate of tax on goods and services for these food products, and almost 1/3 (29.2%) believe that the rate of 23% is applied. Unfortunately, no one has given the correct answer. All the indications are presented in Figure 13.

On the other hand, in the next question, participated in the survey mothers have indicated what should be the tax rate on goods and services for organic food for infants and children. The respondents agree that the rate should be 0% (54.2%). 1/3 of people (29.2%) do not express their opinion (Figure 14). The linear correlation coefficient has been calculated between the last two data sets, i.e. responses to current and expected rates. It was 0.057376. This value shows that there is no linear correlation.

The χ^2 test has also been used for the same set of variables. The test value is $p = 0.684164$. The number of the degrees of freedom in the test is $n = 16$ (4×4). Assuming the significance level of $\alpha = 0.999$, we obtain the value from the distribution table of 3.94163. The calculated result is lower than the value from the table. Concluding with caution, it can be said that these data are interdependent.

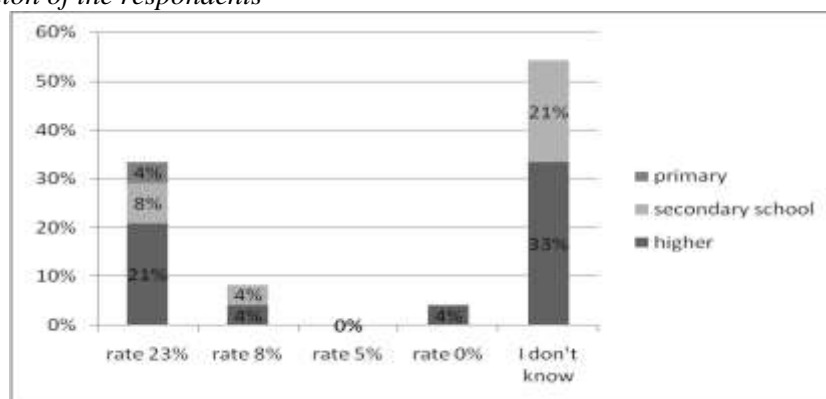
Figure 14. The rate of the tax on goods and services for organic food for children and infants which should be applied according to the respondents



Source: Own elaboration based on research.

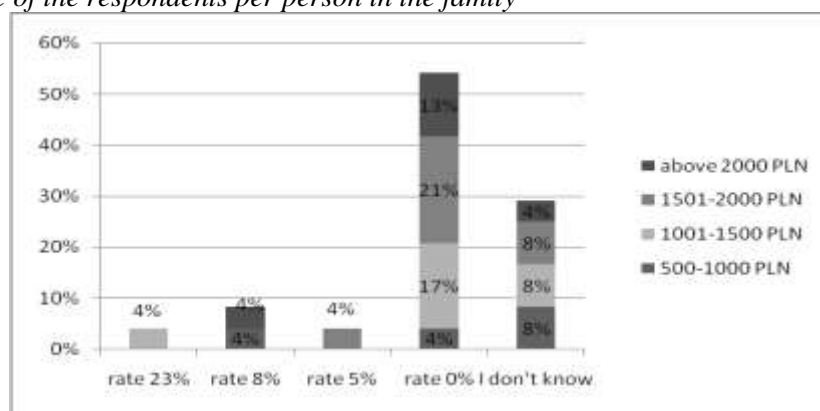
In the next stage of the statistical analysis, the answers to several questions have been submitted to correlation. First, the respondents' knowledge of the current VAT rates has been correlated with the respondents' education. Among the respondents who have declared that they do not know what the current tax rate on organic food for children and infants is, the largest number of respondents have higher education (33%) and secondary education (21%). The distribution of the remaining answers is shown in Figure 15.

Figure 15. The rate of the tax on goods and services on organic food and the education of the respondents



Source: Own elaboration based on research,

Figure 16. The preferred rate of tax on organic food goods and services and the net income of the respondents per person in the family

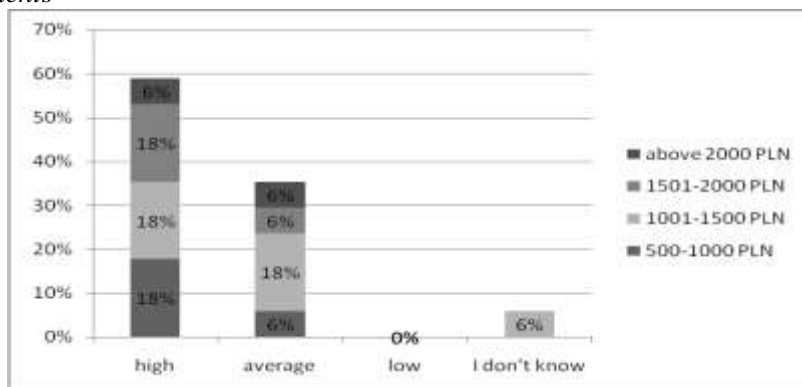


Source: Own elaboration based on research.

Secondly, the preferred rate of the tax on goods and services for organic food has been correlated with the net income per person in the family. The 0% rate is indicated mostly by people with net income in the range of PLN 1501-2000 (21%) and PLN 1001-1500 (17%). The full picture of all the answers in the distribution is presented in Figure 16.

The correlation of the evaluation of the price level of organic food has shown interesting results. The respondents assessing the level of prices as high are people with income in three ranges, 18% each, i.e. PLN 500-1000, PLN 1001-1500 and PLN 1501-2000. The same share of the respondents from the PLN 1001-1500 range admit that the prices of organic food are average. Figure 17 shows all the correlated values.

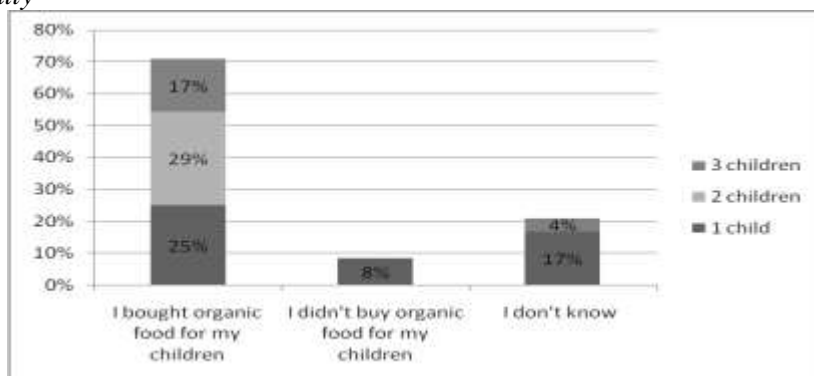
Figure 17. Assessment of the price level of organic food and the net income of the respondents



Source: Own elaboration based on research.

The last correlation has been made between the responses concerning purchases of organic food for children and the number of children in the family. Among families with one child, the greatest number of mothers admit making such purchases (25%). On the other hand, among all the families that purchase organic food for their children, the highest rate is constituted by families with two children (29%) (Figure 18).

Figure 18. The purchase of organic food for children and the number of children in the family



Source: own elaboration based on research

5. Conclusion

To sum up, most of the surveyed parents have showed knowledge about the labelling of certified organic food. It means that the next answers of the studied sample have been mostly true, because without this knowledge, the declarations of purchasing behavior could be incorrect, especially when almost all the respondents indicate that they generally purchase organic food. Organic food for their children and infants is bought by slightly fewer members of the sample.

When making purchases for the youngest members of the family, first of all, parents pay attention to the quality of the product and health benefits. Among all the brands of organic baby food available on the Polish market, three leading brands among mothers' opinions have been selected. The frequency of such purchases is also significant because more than half of the parents buy organic food for their children at least once a week.

The Internet appears as an appreciated form of organic food distribution in the respondents' statements. The price level of organic food for children is also assessed as high. Similar answers were given by respondents in 2014 when asked about the level of organic food prices in Poland in general (Jarczok-Guzy, 2018). Mothers participated in the survey have also declared that they would only buy organic food if its prices were equal to the prices of food produced with traditional methods.

Mothers' expectations towards a lower price have also been reflected in the proposed forms of promotion. Regarding the financial aspects of making purchases, unfortunately, the respondents show ignorance in the context of the current tax rates on goods and services for organic food for children and infants.

Namely, the expectations in relation to the preferred tax rate are consistent. Parents would prefer to set 0% rate for these types of goods. These answers do not also raise any doubts because the rate of tax on goods and services is inextricably linked with the shaping of the final price of the product. The aim of the work hereby has been achieved.

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