

## EVALUATION OF FINAL BUYERS' EXPECTATIONS REGARDING NEW FOOD PRODUCTS

### Abstract

The article presents the problem of new food products in the context of their evaluation in terms of the expectations of final buyers. The author of the article has performed **a comparative analysis of food products currently offered against the expectations of final buyers**. In addition, the research made it possible to ascertain the characteristics new food products should have in order to better meet the needs of food buyers. In this way, the article outlines potential directions of the activities of providers in shaping new food products. The research was carried out among Polish final food buyers. The research sample included two selected voivodeships (Lubelskie and Mazowieckie).

### Key words

expectations, new product, final buyers, food

### Introduction

The food product market is an important market type, due to, among other aspects, the importance of food, **which is acquired by most households**. The importance of food is further enhanced by the fact that it has the greatest share of the costs incurred by Polish households [1]. It is worth mentioning here that households with the lowest income per person usually spend the majority of their income on food. In comparison, wealthy households spend relatively little on food. At the end of the twentieth century, however, it was noted that wealthy households spend more and more on food; not because they consume more, but because they buy more expensive food, priced on average about 30% higher than standard products [2].

Similar trends have been noted by other authors. Their research clearly demonstrates that in rich societies, the percentage of food expenditure within total expenditure has been decreasing over the past few decades, and that the structure of consumption has also been changing. The quality of the products is becoming more and more important when making decisions regarding the purchase of food, at the expense of their quantity [3]. This phenomenon is occurring on an ever-increasing scale in developed countries. There is a kind of elitist demand for high quality food products.

When analyzing food products currently offered and the expectations of food buyers, attention should be paid to the changes in behaviors, requirements and preferences of food buyers. According to A. Borowska, in Poland changes are occurring both in the level and in the structure of food consumption. An example of these changes is various trends (e.g. ethnocentrism, ecoconsumption, homocentrism, deconsumption). Among others, these changes are the result of the economic development of the country, the increase in the level of Poles' wealth, their level of education, better access to market information, and the presence of transnational companies on the market, introducing new products with almost no time delay. In addition, buyers are increasingly sensitive to the original, unique nature of a food product. On the one hand, trends of contemporary globalization of consumption often lead to the unification of consumption; on the other, they also make potential buyers look for atypical products that distinguish them from other people [4].

This fact makes **food providers increasingly attached to the ability to create new food products effectively, taking into account the expectations of final buyers, and forces them to treat buyers as co-producers of the product range**.

### The objectives and characteristics of the research

The research conducted was aimed at identifying the expectations of final buyers regarding the food products they bought. The purpose of the study was also to determine the potential direction of the activities of providers in shaping the characteristics of new food products.

The research was conducted using the survey method. The research instrument was a survey questionnaire. Selection of the research sample was non-random (quota-based), but the selection of final buyers as research subjects primarily resulted from their growing importance in the market activity of food suppliers. The sample was made up of adult final purchasers and consumers of food products, representing the two selected voivodeships (i.e. the Lubelskie and Mazowieckie voivodeships). As a result of the study, a total of 910

questionnaires were completed, which were used in the further stages of the research process, which consisted of conducting a statistical analysis.

The majority of respondents were **women (62.4%)**. The largest percentage of respondents (**38.3%**) indicated a **village** as their place of residence. On the other hand, the smallest part was inhabitants of cities with a population of 100 to 200 thousand inhabitants (1.5%). The highest proportion of respondents (**41.8%**) had **higher education**. More than one in three respondents (34.4%) had a secondary education. The percentages of people with vocational and Bachelor's degree education were similar (12.1% and 9.8% respectively). In turn, the smallest proportion of respondents had only lower secondary education (0.3%), while only 1.6% of the people had only primary school education. The largest percentage of respondents (**27.8%**) was aged **26-35**, while the smallest percentage (2.2%) was over 65. The largest share of respondents (**27.3%**) lived in **4-person** households. The percentage of respondents representing the largest households (i.e. 5 or more people) was only slightly lower (25.6%). The smallest proportion (7.1%) of the people surveyed formed single person households. In the case of the highest percentage of respondents (**22.4%**) the monthly net income per person in the household was **PLN 651-900**. **One fifth** of the respondents declared their monthly income per person to be **PLN 901-1300**. The smallest monthly net income per person in the household (up to PLN 400) was reported by 8.9% of the respondents, while the highest income (above PLN 2000 per person) was reported by 14.0% of the respondents. According to the research, supermarkets and small local shops were the main places where respondents purchased food products. The research has also shown the relatively small importance of cash and carry-type stores (among large area outlets), as well as marketplaces and online grocery stores, which have played a perceptible but insignificant role as places to buy food products.

### Research results

Respondents were asked to identify the characteristics they would give to different types of food groups. For **meat products**, the majority of respondents **would improve the organoleptic characteristics** (taste, appearance, smell, juiciness, color, lifespan, freshness). Some of the final buyers surveyed indicated the necessity to reduce or completely eliminate the **preservatives added to meat products**, and the excess fat, water and low quality additives (e.g. salt). The respondents also proposed the use of better quality and greater quantity of meat in the meat product production process. It can therefore be stated that respondents stressed the need for a practical return to traditional **old Polish recipes**, which would have a positive impact on the quality of the products and, consequently, their safety, which is one of the key aspects in their hierarchy.

Some of the respondents' suggestions were to modify the meat products offered through the use of cold cuts additives (e.g. herbs, spices, cheese, garlic), stuffing cold cuts with fruit (berries, oranges) or vegetables, and offering meat products made from different types of meat.

Respondents' suggestions regarding meat products were also related to the functions fulfilled by their packaging, including:

- the utility function (e.g. packages allowing easy opening and closing multiple times),
- the ecological function (e.g. biodegradable packaging),
- the informational function (packaging conveying reliable and very detailed information on the composition of the product).

Respondents indicated the need to improve some characteristics **of dairy products** (e.g. the taste, color, smell, consistency, lifespan) which determine their quality. In addition, as in the case of meat products, respondents **proposed restricting or eliminating artificial additives** (e.g. preservatives, colorants, thickeners, modified substances (soy, starch)).

Respondents found the range of dairy products available on the market to be too poor at the moment, especially in terms of regional products. In their opinion, too few **dairy probiotic, dietary and organic products** are available, and these products are relatively expensive. There were also suggestions by respondents to offer different categories of dairy products with healthy and functional effects (dairy stimulants, sedatives, products allowing for greater concentration).

As in the case of meat products, respondents suggested extending the market offer with dairy products incorporating new flavors (e.g. yogurt, butter, cream, so-called flavored milk), products with reduced fat (in the case of cheeses), using less preservatives (cream), increasing the content of natural milk in the milk offered and adding natural fruit to yogurts; thus they suggested rather typical modifications to existing products offered.

In addition, respondents proposed changes to the packaging of dairy products and labels (exposing the need for conformity of the information placed on the label with the fact base). According to respondents, the packaging of dairy products **should be more functional** and aesthetically pleasing (e.g. more colorful, have a different shape), have more varied volumes (depending on product type) and better meet current ecological requirements (modern biodegradable or returnable glass packaging).

The respondents also indicated the need to improve the quality of **bakery products**: they associated the quality of this group of food products first and foremost with organoleptic characteristics, such as **smell and crispiness, and lack of artificial ingredients** in breadstuff composition, especially artificial dyes and conditioners, affecting, inter alia, the shelf life of products.

Some respondents believed that the **assortment of bakery products** currently offered **was too narrow** and/or **shallow**. Proposals for its expansion with the following products were the most frequent:

- rye bread produced on natural sourdough,
- various types of dark bread with additives (e.g. cranberries, blueberries, onions, garlic, mushrooms, sunflower),
- regional bakery products,
- organic bakery products, low-processed,
- dietary bakery products (with lower sugar content, fewer calories),
- bakery products with various additives (e.g. buns with herbs, vegetables, meats),
- wholemeal baked products with additional fiber,
- bakery products for children with a higher content of nutrients (e.g. in the form of cartoon characters).

In addition, suggestions by some respondents concerned the introduction of changes to the packaging of bakery products, for example through the complete replacement of foil packaging with paper packaging.

Respondents' suggestions for other groups of foodstuffs also focused on improving the quality by reducing or eliminating artificial additives. They were particularly concerned with **the health and safety aspects of food consumption**. Respondents' indications regarding new features of food products concerned changes to existing products or the introduction of new products that would allow them take better care of their own and their family members' health (natural juices, natural juice-based flavored waters, diabetic candies, breakfast cereals with new flavors and shapes, and all-natural coffee and tea), physical fitness (e.g. natural light-type beverages), and the environment (e.g. through the use of organic packaging, beverages in returnable bottles).

Respondents were also expected to determine the **consistence of the characteristics of the foodstuffs currently being offered with their expectations**. Individual food groups were evaluated on a scale from 0 to 5, where 0 indicated a complete mismatch of product characteristics with expectations, 1 - low consistence, 2 - average consistence, 3 - high consistence, 4 - total consistence, and the highest grade - 5 - meaning that respondents' expectations were exceeded by the characteristics of a particular group of food products.

The analysis of the consistence of the characteristics of food products currently offered with the expectations of the final buyers surveyed was based on the calculated average values of the ratings awarded by respondents to individual food product groups. As shown in table 1, the highest consistence with respondents' expectations was found **in the water group**, while the lowest was found in frozen convenience food and cold cuts. It is worth noting, however, that none of the product groups received an average rating of at least 4.0, indicating **that the features of the products offered were not fully matched with respondents' expectations**.

The author believes that from the point of view of food providers, products that have achieved the lowest values of average marks, i.e. frozen convenience foods and cold cuts (the average values were 2.6 each) are of the most importance. In addition to the above-mentioned product groups, snacks, crisps and beverages also received average scores below 3.0. This should be an important warning sign, and at the same time a stimulus for increased efforts on the part of their providers to adapt these products to the expectations of final buyers and consumers. It is also worth noting that no characteristics of any of the food groups analyzed exceeded respondents' expectations. The lack of the highest ratings reflects the existence of a specific marketing gap, the filling of which may be favored by, for example, unconventional (alternative) ways of obtaining ideas for new products (e.g. lateral thinking).

Table 1. The values of average assessment ratings of the conformity of the characteristics of the food products offered with the expectations of respondents

Group of food products	Average rating values (0-5)
Water	3.6
Breadstuff	3.4
Kefirs	3.4
Yogurts	3.4
Milk	3.3
Coffee/tea	3.3
Cereals	3.3
Candy bars	3.2

Cookies	3.2
Cheeses	3.2
Juices	3.0
Carbonated/non-carbonated drinks	2.8
Snacks/chips	2.7
Cold cuts	2.6
Frozen convenience foods	2.6
Other (what?) .....	-

Source: Author's study based on survey results.

The results of the analysis of the conformity of the food products offered with the expectations of respondents were verified through the application of factor analysis. The factor analysis performed allowed the distinguishing of 3 main factors (within the factor analysis, the author has assigned particular groups of food products to the particular factors), which were characterized by the most consistence of characteristics with respondents' expectations. The isolation has been made using the Kaiser criterion, where the factors (products) for which the author's values exceeded the value of 1 are subjected to analysis (table 2).

Table 2. Author's values isolated using the Kaiser criterion

No.	Factors (products)	Author's values	Total variance (%)
1.	dairy products	5.752	38.35
2.	confectionery products	1.332	8.88
3.	bakery and meat products	1.168	7.79

Source: Author's study based on survey results.

The first author's value (5.752) explains 38.35% of the variability, while the last author value (1.168) explains only 7.79% of the variability. The results obtained for individual characteristics of the percentage of the total variance show the importance of the extracted components for respondents.

The factor analysis (table 3) shows that for the first factor (dairy products), positive factor values with a value equal to or greater than 0.7 for the characteristics described in the questionnaire question as "kefirs" (0.737) and "yogurts" (0.759) .

Table 3. Factor analysis of the conformity of the characteristics of the food products offered with the expectations of respondents

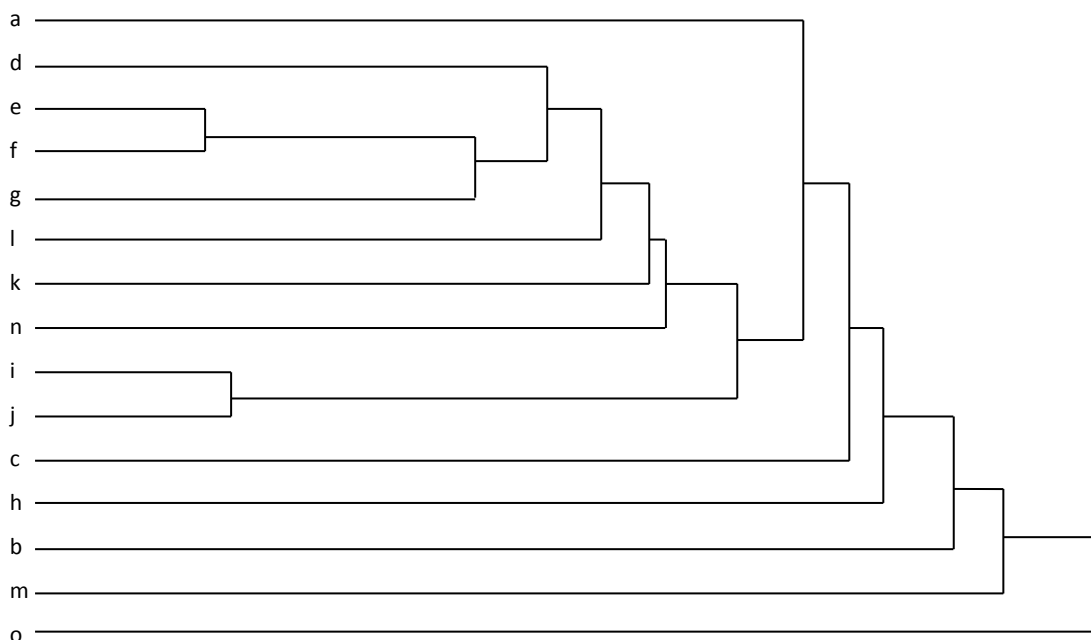
Group of food products	Factors (products)		
	dairy products	confectionery products	bakery and meat products
Breadstuff	0.152	0.144	<b>0.775</b>
Cold cuts	0.096	0.146	<b>0.771</b>
Juices	0.293	0.242	0.587
Water	0.494	0.190	0.406
Kefirs	<b>0.737</b>	0.060	0.331
Yogurts	<b>0.759</b>	0.079	0.357
Milk	0.503	0.187	0.482
Carbonated/non-carbonated drinks	0.057	0.610	0.394
Candy bars	0.148	<b>0.809</b>	0.238
Cookies	0.192	<b>0.745</b>	0.261
Coffee/tea	0.365	0.461	0.029
Cheeses	0.575	0.257	0.210
Snacks/chips	0.279	0.660	0.086
Cereals	0.620	0.370	-0.045
Frozen convenience foods	0.516	0.379	-0.030
Other (what?) .....	-	-	-

Source: Author's study based on survey results.

It can therefore be concluded that the dairy products represented by **yogurts and kefir** were the most **compliant with the expectations of the final buyers**. Within the second factor (confectionery), cookies and candy bars obtained positive factor loads of at least 0.7 (0.745 and 0.809 respectively). Nonetheless, the food products from the second factor were less in line with the expectations of respondents. It is true that **bread and cold cuts**, representing the last isolated factor, **were least consistent with the expectations of the final buyers surveyed**, but the degree of this consistence was large enough for them to form one of the 3 main factors.

Apparent discrepancies between the results of the analysis of the average ratings and the results of the factor analysis (e.g. for cold cuts) are due to the nature of factor analysis, which also allows searching for hidden relationships between the examined elements, regardless of the factors assigned to them by respondents. The results of the factor analysis are confirmed by the cluster analysis performed additionally (figure 1). Its graphical form illustrates which food products were evaluated similarly by respondents.

**Kefirs (e) and yogurts (f)** are the products that are most similar, from the point of view of the consistence of their actual characteristics with respondents' expectations. Products belonging to the two groups mentioned above were associated with milk (g) by respondents, but the association was weaker. Taking into account the consistence of the features with expectations, respondents also associated candy bars (i) and cookies (j). It is noteworthy that frozen convenience foods (o) were not associated with other products, which confirms the relatively low degree of consistence of the characteristics of these food products with the expectations of respondents.



Where: a - breadstuff, b - cold cuts, c - juices, d - water, e - kefir, f - yogurts, g - milk, h - carbonated/non-carbonated drinks, i - candy bars, j - cookies, k - coffee/tea l - cheeses, m - snacks/chips, n - cereals, o - frozen convenience foods.

Figure 1. A hierarchical tree of the consistence of the characteristics of the food products offered with the expectations of respondents

Source: Author's study based on survey results.

In addition, respondents were required to determine the **degree of change in prices and attributes of different food products needed to make them better suited to their expectations**. The size of these changes was determined using a scale of 0 to 3, where 0 indicated no change, 1 indicated minor changes, 2 indicated moderate changes, and 3 indicated major changes.

The results presented in table 4 (concerning moderate changes in products (rating 2)) indicate that the two most important changes should be the **quality and price of all products**, as evidenced by the conclusions made earlier. The relatively high values of the average ratings pertained to organoleptic characteristics for cold cuts and breadstuff. In addition, the highest average values for quality and price changes also pertained to cold cuts and breadstuff. These results coincide with the results of the factor analysis conducted, concerning the consistence of the characteristics of the food products currently offered with the expectations of respondents.

According to the author, attention should be paid to how the indications of respondents who did not expect any changes (score 0) or who expected only minor changes (rating 1) to the attributes and prices of the food products analyzed were shaped. It can be assumed that respondents who answered in this way are quite satisfied with the current product range. This is important information for those food providers who see market success in creating and promoting so-called market novelties (e.g. new categories/subcategories of food products). The figures in table 5 reflect the total indications (in percentages) of respondents who would, at the very least, make minor changes to individual elements of particular food products so that they better match their expectations. Particularly in the case of organoleptic characteristics, it can be noted that respondents did not see the need to introduce changes to the food products offered, regardless of their group, except for cold cuts, which in this context were indicated by 16.7% of the people. The relatively lowest percentages of indications for minor changes or lack thereof were related to product attributes such as package coloring and name, indicating that this is the area in need of changes, regardless of the product group. It is interesting to note that respondents pointed out that the **name of the product should be changed rather than its brand**, so this probably concerned the non-verbal layer. In addition, a similar percentage of indications for possible minor changes concerned labeling, product functionality and markings.

Table 6, in turn, shows respondents who expected major changes (rating 3) to food product attributes and their prices, in percentages. The figures confirm the previous conclusions about the need to change the quality of cold cuts, the organoleptic characteristics of which would be changed by the majority of respondents.

However, the conclusions regarding the current coloring of the packaging and the name of the product have not been fully confirmed. Thus, a relatively small percentage of indications regarding the need to make large changes to the shape of the packaging or its coloring or name demonstrate the small value of significant transformations to these, from the viewpoint of meeting the expectations of respondents. That is why this type of modification, i.e. major changes to food products by providers, may go unnoticed by potential final buyers, not yielding the expected marketing effects.

It follows that **moderate changes to marketing attributes of food products that are less costly for the providers** are sufficient. On the basis of the previous considerations, it can be stated that there is a gap between the expectations of the respondents and the attributes and marketing attributes of the food products currently offered on the market, especially for some product groups.

Table 4. Respondents' indications reflecting the degree of moderate (rating 2) changes in food product attributes and their prices (in %)

Evaluated element	Rated food products														
	Breadstuff	Cold cuts	Juices	Water	Kefirs	Yogurts	Milk	Carbonated drinks	Candy bars	Cookies	Coffee/tea	Cheeses	Snacks/chips	Cereals	Frozen convenience foods
Shape of the package	0.32	0.57	0.53	0.40	0.46	0.47	0.54	0.49	0.39	0.55	0.48	0.50	0.54	0.49	0.67
Packaging coloring	0.31	0.41	0.42	0.36	0.47	0.46	0.44	0.42	0.43	0.46	0.40	0.43	0.39	0.36	0.48
Label	0.62	0.81	0.62	0.52	0.61	0.61	0.54	0.58	0.53	0.58	0.55	0.65	0.56	0.49	0.67
Product functionality	0.50	0.69	0.59	0.42	0.51	0.54	0.49	0.50	0.44	0.48	0.44	0.50	0.55	0.41	0.65
Product quality	1.38	2.05	1.34	0.81	0.97	1.10	1.11	1.26	0.95	1.05	1.01	1.20	1.25	0.84	1.30
Price	1.62	1.84	1.53	1.09	1.10	1.19	1.21	1.27	1.22	1.30	1.50	1.58	1.22	1.17	1.28
Name	0.29	0.41	0.34	0.32	0.31	0.31	0.30	0.36	0.36	0.35	0.33	0.36	0.36	0.31	0.37
Brand	0.37	0.45	0.40	0.34	0.37	0.37	0.37	0.40	0.37	0.39	0.42	0.41	0.37	0.35	0.44
Organoleptic characteristics	1.02	1.49	0.93	0.46	0.67	0.77	0.73	0.84	0.60	0.69	0.72	0.87	0.78	0.59	0.93
Markings	0.67	0.88	0.65	0.46	0.51	0.58	0.53	0.64	0.55	0.55	0.55	0.68	0.59	0.50	0.64

Source: Author's study based on survey results.

Table 5. Indications for only minor changes (rating 0 or 1) to the attributes and prices of food products or lack thereof (in %)

Evaluated element	Rated food products														
	Breadstuff	Cold cuts	Juices	Water	Kefirs	Yogurts	Milk	Carbonated drinks	Candy bars	Cookies	Coffee/tea	Cheeses	Snacks/chips	Cereals	Frozen convenience foods
Shape of the package	16.70	21.76	22.64	17.69	22.09	20.66	20.22	18.24	17.03	20.88	19.23	19.89	16.92	19.12	18.90
Packaging coloring	13.96	16.04	17.91	14.95	19.45	16.48	15.82	16.15	15.38	16.04	16.26	19.78	14.62	16.26	16.81
Label	22.86	21.98	20.99	21.76	23.19	21.76	22.20	20.33	20.88	23.52	21.76	21.54	20.11	20.88	19.89
Product functionality	20.55	20.33	20.66	16.04	22.86	21.54	20.00	20.44	16.81	18.57	18.57	19.89	15.93	20.88	19.89
Product quality	23.08	10.55	23.52	22.53	25.38	25.27	21.76	20.33	22.86	19.34	23.08	22.31	17.25	23.41	18.02
Price	23.30	17.03	23.41	23.63	25.38	27.36	24.29	23.63	23.41	22.75	18.79	16.92	22.20	21.76	23.52
Name	14.62	15.82	17.47	13.30	16.37	16.15	15.82	17.58	15.71	17.03	14.73	16.37	14.51	13.85	15.60
Brand	19.34	17.36	20.66	18.02	16.92	16.81	18.68	17.36	16.15	18.02	16.37	16.59	14.40	16.26	15.27
Organoleptic characteristics	28.13	16.70	25.38	18.24	23.96	24.29	24.29	20.22	24.73	25.05	23.85	24.18	20.33	22.42	20.66
Markings	21.43	19.12	19.34	19.45	21.21	20.22	17.58	18.46	18.46	17.25	18.02	19.12	17.03	18.68	16.70

Source: Author's study based on survey results.



Table 6. Indications for major changes (rating 3) to the attributes and prices of food products or lack thereof (in %)

Evaluated element	Rated food products														
	Breadstuff	Cold cuts	Juices	Water	Kefirs	Yogurts	Milk	Carbonated drinks	Candy bars	Cookies	Coffee/tea	Cheeses	Snacks/chips	Cereals	Frozen convenience foods
Shape of the package	1.65	4.73	2.75	2.09	2.09	2.75	4.07	4.40	2.42	2.20	3.30	3.41	5.27	3.52	7.47
Packaging coloring	2.31	2.97	1.98	1.87	3.52	2.64	3.63	2.75	2.31	3.19	2.20	2.64	2.86	2.09	5.05
Label	4.95	8.90	4.73	2.86	4.18	5.05	3.85	4.84	3.41	4.18	3.19	5.71	4.18	3.63	6.26
Product functionality	3.63	7.03	4.62	4.07	2.86	3.96	2.31	3.08	3.08	3.63	3.08	3.08	6.04	2.53	5.71
Product quality	18.35	43.85	16.59	9.23	10.55	13.30	13.41	20.99	11.87	13.08	12.53	16.59	21.98	8.68	21.43
Price	26.15	33.41	25.38	15.82	16.81	17.91	17.47	19.89	18.24	19.34	23.85	27.47	19.89	18.24	20.55
Name	0.88	2.97	1.32	1.32	1.98	1.54	0.55	1.54	2.31	1.54	1.76	2.97	2.09	2.09	2.97
Brand	1.87	3.52	2.86	1.98	1.76	2.42	2.09	2.75	1.76	2.53	3.30	3.08	2.31	2.42	3.85
Organoleptic characteristics	11.54	25.82	8.9	2.75	4.40	6.37	7.36	8.68	3.63	5.38	5.93	7.58	8.68	4.07	11.43
Markings	5.60	11.43	6.04	3.63	3.74	5.05	4.95	6.15	3.74	4.07	4.07	6.92	6.15	3.85	5.93

Source: Author's study based on survey results.

## Conclusion

The research revealed a clear gap between respondents' expectations and the characteristics and marketing attributes of the food products currently offered on the market. According to respondents, the greatest changes should be related to the **quality and price of virtually all food products**. In addition, the research results indicate the need to diversify the range, for example by giving individual products characteristics that on the one hand better distinguish them from other products, and on the other hand allow them to adapt better to individualized and rapidly changing customer expectations.

Analysis of respondents' indications concerning the characteristics and attributes of food products **demonstrates little importance of changes to, inter alia, the current coloring and shape of the packaging**. In particular, a small percentage of indications regarding the need to make major changes to the shape of the package or its coloring indicate the low marketing value of this type of modification, from the point of view of meeting the expectations of respondents. The results obtained confirm rather limited possibilities of making superficial modifications as a way of creating authentically new food products. In contrast, in respondents' opinions, the most important features of food packaging are its utility and its ecological and informative functions.

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