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The importance of the market offer in building the international competitiveness of food industry enterprises

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ABSTRACT

Objective: The article aims to determine the importance of the market offer on the international competitiveness of food industry enterprises.

Research Design & Methods: The study consisted of several stages. The first one involved a systematic review of the literature on competitiveness, competitive factors, market offerings, and new food trends. In the empirical part, I conducted CATI interviews with representatives of a representative sample of food industry enterprises. At the inference stage, I used descriptive statistics, the Kruskal-Wallis test, the Mann-Whitney test, the multiple comparison test, and box-plot plots.

Findings: The original empirical study shows that implementing certain market offer solutions can enhance the international competitiveness of food industry enterprises. Quickly responding to customer signals plays a crucial role in building competitiveness. Solutions such as the development of traditional food, introduction of diversity of the commercial offer, development and popularisation of own brands, creation of a product brand with unique values for the consumer, promotion of local products, and development of functional food will have a high impact.

Implications & Recommendations: Identifying factors that contribute to enhancing the competitiveness of food industry enterprises on the market should be useful for managers involved in formulating strategies, including competitive strategies. Implementing appropriate solutions related to shaping the market offer will enable obtaining many benefits (e.g., standing out on the market, increasing the value of the offer, building customer loyalty and satisfaction, increasing demand) and improving competitiveness.

Contribution & Value Added: The rapid changes in the environment create undiscovered potential for new opportunities to compete and create a competitive advantage for food entities. From a cognitive and application perspective, an important and insufficiently researched issue is to determine the factors of international competitiveness of these entities. The study fills a research gap in the scope of the importance of an appropriate market offer (especially in the context of new food trends) from the perspective of the competitiveness of food businesses. In the literature, the offer analysis is mainly from the consumer's perspective. The added value of this study lies in the gradation of selected solutions and the assessment of their significance for competitiveness, ranging from very high to very low.

Article type: research article

Keywords: competitiveness; competitive advantage; food industry; market offer; new food trends

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INTRODUCTION

Interest in competitiveness is related to the ongoing processes of globalisation and internationalisation, and, consequently, more open markets and intensive changes in market rules (Vega *et al*., 2019). In the conducted scientific discourse, various aspects of competitiveness are examined, including competitive potential, strategies and instruments of competition, and competitive results. From the

cognitive and application point of view, an important research problem is to determine the factors that make some entities do well on the market and are competitive, while others do not. Competitiveness factors are dynamic and, as Kuchmieiev (2023) notes, the issue of determining them not only does not lose its importance, but requires a new approach. Rapid changes in global economies and societies are creating new conditions for the functioning and competition of entities. Currently, manufacturing companies are facing new challenges, including unstable demand and changing customer requirements, as well as the rapid development of new technologies (Demartini *et al*., 2018; Boikova *et al*., 2021). This also applies to the food industry. Many authors emphasise that the supply chain has been 'inverted' in this industry. The supply-based approach has changed to a demand-based approach, in which consumers indicate to producers what they want to eat (Boland, 2008; Bigliardi & Galati, 2013; Demartini *et al*., 2018; Matsumoto *et al*., 2020). New models of food consumption and consumer behaviour are emerging, resulting from the interaction of many social, cultural, economic, and environmental factors (Franc & Kujevac, 2021; Hassoun *et al*., 2022). According to Aday and Aday (2020), new nutritional expectations have also emerged due to the increased awareness of food safety and health during the COVID-19 pandemic. On the other hand, emerging technological breakthroughs of industry 4.0 have paved the way for food producers to create a new generation of foodstuffs. The fourth industrial revolution has also revolutionised the way food is produced, transported, and stored worldwide (Marvin *et al*., 2022; Hassoun *et al*., 2024). This creates an unexplored potential for new opportunities for food entities to compete and create a competitive advantage. In the literature, the analysis of food offers and trends are mainly conducted from the perspective of consumer preferences, consumer rationale, environment and sustainable development, as well as the impact of diet on people's functioning and health (*e.g.*, Siegrist & Hartmann, 2020; Topolska, 2021; Siddiqui *et al*., 2022; Alae-Carew, 2022; Magalhaes *et al*., 2023). However, there is a need to better understand the creation of an appropriate market offering (especially in the context of new food trends) from the perspective of the ability of food entities to compete. The identification of the research gap in this area became the premise for undertaking the study.

The research objective was to determine the importance of the market offer on the international competitiveness of food industry enterprises (from the perspective of Poland). Moreover, I asked the following research questions:

RQ1: Which elements related to the market offer are of high, medium and low importance in building the international competitiveness of the food industry?

RQ2: Does the perception of the importance of elements related to the market offer in building international competitiveness differ between food and beverage companies?

RQ3: Does the perception of the importance of elements related to the market offer in building international competitiveness differ between companies with small, medium and long experience on the market?

The considerations presented in the article aim to address the cognitive gap identified in the existing literature on the topic. In the practical dimension, understanding the importance of elements related to the market offer can become the basis for further discussion on the implementation of appropriate solutions contributing to more efficient operation, as well as gaining an advantage and increasing the international competitiveness of food production companies and the entire food industry. The study presents the current state of knowledge on the discussed issue. The empirical layer uses information gathered from interviews conducted among representatives of a representative sample of food industry companies using the CATI method. I used descriptive statistics, the Kruskal-Wallis test, the Mann-Whitney test, the multiple comparison test and box-plot charts to analyse the data.

The article is structured as follows. The literature review discusses the concept of international competitiveness and the selected conditions and changes in demand on the food market. The research methods section presents the methodological approach and the quantitative tools used. Then, the article presents and discusses results. The conclusions summarise the article, include implications for practice, emphasise the limitations of the study and possible directions for further analysis.

LITERATURE REVIEW

Due to the multi-aspect nature of competitiveness, various economic theories (including economic growth, microeconomics and international trade) refer to the issue as well as to entities at various economic levels (enterprises, industries, sectors, regions, national economies) (*e.g.*, Sanli & Ates, 2018; Charles & Sei 2019; Yanton-Drozdovska, 2020). Competitiveness reflects how entities manage their competencies and use resources to achieve long-term prosperity or profit (Deakins & Freel, 2012; Bhawsar & Chattopadhyay, 2015). It is associated with better and sustainable multidimensional economic performance (Fischer & Schornberg, 2007). The complexity and multidimensionality of competitiveness mean that there is no clearly developed and widely accepted definition of this concept. In a general approach, we may understand it as the ability to win and gain benefits in a market with increasing competition (Maroto-Sanchez & Cuadredo-Roura, 2013) or the ability to compete in a competitive environment, to grow, and be profitable (Sipa *et al*., 2015). When reviewing the literature on the subject, we can notice that the way of defining and then analysing competitiveness depends not only on the adopted level of analysis (country, region, industry, enterprise), but also on the emphasised aspect of this multidimensional phenomenon. Various definitions perceive the competitiveness of enterprises and industries as the ability of an entity to achieve specific goals, such as providing added value to stakeholders (Dwyer & Kim, 2003), being profitable and maintaining a dominant position on the market (Lombana, 2006; Wijnands *et al*., 2007). Many definitions of competitiveness emphasise the aspect of the market offer and the ability to adapt to customer needs. For example, as indicated by Domazet (2012) and Harvey *et al*. (2017), we may define competitiveness as 'the ability of firms to consistently and profitably produce products that meet the requirements of an open market in terms of price [and] quality.' According to Dolzhansky and Zagórna (2006), we may interpret an enterprise's competitiveness as 'the ability to produce and sell products quickly and in sufficient quantities, at a high technological level of services and as the ability to effectively dispose of own and borrowed funds on the terms of a competitive market.' In the article, I consider competitiveness with particular emphasis on the aspect of the importance of the market offer and its adjustment to customer needs.

The changes taking place in the food market, as well as the specificity and special importance of food products, mean that producers striving to be competitive on the market and satisfying the modern consumer should consider many important factors related to the offer, which are diverse. A modern approach to the sales process requires a quick response to customer needs. This constitutes the basis of the agile concept described in the literature, which we can treat as a key element enabling companies to effectively adapt to changing market conditions and achieve success (Wiechmann *et al*., 2022). According to Porter (1980), we may also associate competitive advantage with the creation of unique products that stand out from the competition with special features, quality, or design. The product is perceived as unique and provides the customer with benefits that other products on the market do not offer. The literature also draws attention to the growing demand for food products, including high-quality products, due to the growth in the world population and the growth in income in developing countries (Franc & Kujevac, 2021; Siddiqui *et al.,* 2022). Higher-income buyers perceive food products as those that can satisfy various needs, not only basic ones (*e.g.*, emphasising the appropriate status) (Lazaridis & Drichoutis, 2005). Due to the ongoing demographic changes, the structure of consumers is also changing. The increase in the share of people over 65 years of age is increasing the demand for personalised and nutrient-enriched products (Franc & Kujevac, 2021; Aguilera & Covacevich, 2023). As indicated by many domestic and foreign researchers (*e.g.*, Demartini & Melissa, 2018; Arenas-Jal, 2019; 2020; Franc & Kujevac, 2021), an important trend in the global food industry is the change in purchasing requirements and preferences associated with changes in eating habits. They occur in parallel with the combined effects of urbanisation and globalisation (Belahsen, 2014; Imane *et al*., 2020) and reflect the increased awareness of food chain participants about the impact of food systems on health and the environment (Hassoun *et al.,* 2024). In the new consumption model, more attention focuses on organic, natural, and healthy food (Bendarz, 2017). Consumers are increas-

ingly reaching for minimally processed products without artificial additives. Products providing a specific health benefit, beyond basic nutrition, referred to as functional food (Alongi & Anese, 2021), are playing an increasingly important role. Products of this type may contain additional ingredients, such as probiotics, prebiotics, omega-3 acids, vitamins, or minerals. Some authors indicate that interest in healthy and functional food has increased during the COVID-19 pandemic as a way to care for health and strengthen the body's immunity (*e.g*., Galanakis *et al*., 2020; Vishwakarma *et al*., 2022). In response to consumer expectations, a group of light food products has also been created, which by definition have a reduced energy value (or a limited amount of fat, sugar, salt), which can support weight control and nutrient intake (Szczepańska & Grudowska, 2020). A new nutritional trend that has emerged, among others, thanks to the development of mass media, which have a large impact on the formation of consumer beliefs about food, is the implementation of an elimination diet, most often gluten or lactose. This applies to people with hypersensitivity, allergy, or intolerance, in whom these ingredients cause non-specific diseases, as well as being fashionable among people who, despite the lack of medical indications, believe that such a way of eating supports digestion, improves well-being and contributes to better weight control and energy levels (Jones, 2017; Devulapalli, 2021). An important area of interest, which according to some authors may shape the future of the food industry, is personalised food (Derossi *et al*., 2020; Ueland *et al*., 2020). There is no universal solution when it comes to diet, because nutritional preferences and needs may vary depending on the person (Gan *et al.,* 2019; Ordovas *et al*., 2018). In this respect, new possibilities have been opened up by the development of 3D printing technology (Sun *et al*., 2015; Dankar *et al.*, 2018; Baiano, 2022; Portanguen *et al.*, 2019). The literature on the subject also indicates the growing popularity of prosumption in the food industry (Bednarz, 2017; Vicdan *et al*., 2024). The most engaged prosumers are invited to design new products, packaging, or come up with advertising slogans. Less active customers take part in campaigns organised by manufacturers and evaluate products on online forums and store websites.

This study contributes to the existing knowledge by presenting the importance of the market offer, including new trends in the food market from the perspective of their impact on the competitiveness of the food industry. The conclusions result directly from an original, nationwide empirical study on a representative sample. I included business practitioners, *i.e.*, representatives of food industry companies, in the discussion.

RESEARCH METHODOLOGY

The research procedure consisted of several stages. The first stage analysed the scientific achievements in the field of competitiveness and factors shaping it. I also conducted a literature review in the field of the importance of the offer in creating competitiveness, the situation and changes in demand on the food market and food trends. Using the method of analysis and criticism of secondary sources of information, *i.e.,* articles and compact items of national and international scope, a list of 15 factors related to the market offer was developed, which may be important in building the international competitiveness of food industry enterprises:

C01 – development of functional food
C02 – development of organic food
C03 – development of convenient food
C04 – development of minimally processed food
C05 – development of traditional food
C06 – personalisation of food products
C07 – promotion of local products
C08 – development of food that limits calorie consumption (so-called light food)
C09 – development of products related to the fashion for a specific diet (e.g. lactose-free, gluten-free)
C10 – development of products imitating animal products
C11 – diversity of the commercial offer
C12 – development and popularisation of own brands
C13 – creation of a product brand with unique values for the consumer

C14 – prosumption, *i.e.*, active involvement of consumers in the process of developing new products on the market
C15 – speed of response to customer signals

Based on the literature review, I developed a structured interview questionnaire as a research tool. The respondents assessed the importance of the indicated factors in building international competitiveness on a five-point Likert scale (Likert, 1932).

The second stage included the study implementation. The target group of respondents were representatives of food companies whose activities were included in section C of the PKD 2007 (Polish Classification of Activities 2007) Industrial processing, Section 10 – Food production and Section 11 – Beverage production. I used a stratified random sample selection and the stratification criterion was the PKD section and the size of the company. Based on the formula for the minimum sample size, its size was set at 376 units. I assumed a confidence coefficient of 95% and a maximum estimation error of 5%. I used computer-assisted telephone interviewing (CATI) to collect the data. The companies were located throughout Poland. The sample structure was dominated by those employing up to 10 people (82%). The second group consisted of small companies (14%). The smallest group consisted of medium and large companies (4%). Such asymmetry in the size of companies is consistent with the average size of the population of Polish food industry companies. When examining the structure of the sample based on the period of operation on the market, I found that most of them had at least twenty years of experience (75%). Almost 16% of the entities surveyed had been operating on the market for 10-20 years, and 9% for less than 10 years. Beverage producers accounted for over 5%, and food producers, almost 95%.

In the third stage, I analysed the collected data and made inferences based on statistical methods. I used descriptive statistics including the arithmetic mean and median, lower quartile, upper quartile, mode, standard deviation and coefficient of variation to assess the significance of the analysed factors. Based on the arithmetic mean, I created a ranking of the analysed components, which I grouped according to their importance in building international competitiveness according to my scale (Table 1).

Table 1. The importance of factors in building international competitiveness

Range of arithmetic mean scores	Importance of competitiveness factors
4.20-5.00	very high
3.40-4.19	high
2.60-3.39	medium
1.80-2.59	low
1.00-1.79	very low

Source: own study based on Çelik and Oral (2016), and Renault *et al*. (2018).

Then, I analysed the answers considering the subsector of activity (food producers and beverage producers) and the age of the company (<10 years, 10-20 years, >20 years). I used statistical tests to determine whether there were statistically significant differences between the groups in the assessment of competitiveness factors. In the first case, I used the Mann-Whitney test. I used the test to test the equality of distribution of the two populations:

$$H_0\text{: the medians of the two population are the same}$$
$$H_1\text{: the population medians are not equal} \quad (1)$$

Test statistics take the form:

$$Z = \frac{R_1 - R_2 - (n_1 - n_2)(n_1 + 1)/2}{\sqrt{(n_1 n_2 (n+1)/3}} \quad (2)$$

where:

n_1, n_2- number of samples;
n - number of all observations;
R_1- the sum of ranks awarded to the values of the first attempt.

If I observed significant differences in the evaluation of elements based on the test, then I deepened the analysis. I used box-plot charts, which presented the median, quartiles, minimum, and maximum for the individual analysed groups.

I used the Kruskal-Wallis test to analyse the significance in the groups of enterprises by age. The test allowed testing the null hypothesis that the k samples are from the same population:

$$H_0\text{: all medians are equal}$$
$$H_1\text{: not all medians are equal} \quad (3)$$

I used the non-parametric analogue of a one-way ANOVA test, which one can use when assumptions of normality and/or homoscedasticity are not met (Hecke, 2012; Muhammad *et al*., 2021). For verification, I used the H statistic with an asymptotic distribution with the number of degrees of freedom equal to the number of groups k minus 1:

$$H = \frac{12}{N(N+1)} \sum_{i=1}^{k} \frac{R_i^2}{n_i} - 3(N+1)$$
$$N = \sum_{i=1}^{k} n_i \quad (4)$$

where:

n_i - number of observations in *i* group;
N - number of all observations;
k - number of compared groups;
R_i - sum of ranks in *i* group.

If I found significant differences based on this test, I applied the multiple comparison test. The test consists of comparing the mean ranks for each pair of groups. On this basis, I created p-value matrices. Box-plot charts present the assessments of the analysed groups.

RESULTS AND DISCUSSION

In the empirical study, I asked the representatives of food industry companies for their opinion on the significance of elements selected on the basis of the subject literature related to the market offer in building the international competitive advantage of the company (on a 5-point Likert scale). In the inference process, I created a ranking based on the arithmetic mean (Figure 1), determined basic positional measures, and presented them in box-plot graphs (Figure 2). I grouped the studied factors into those of very high, high, medium and low importance in building international competitiveness (none of the analysed factors was assessed as a factor of very low importance). Moreover, I analysed the assessment of factors considering the production specificity (food production and beverage production) and the company age (Table 2-3, Figure 3-4).

Factors of Very High Importance in Building International Competitiveness

The conducted study shows that, in the opinion of representatives of food industry companies, the most important element in building international competitiveness related to the market offer was quick response to customer signals (C15). We may describe its importance as very high. The arithmetic mean of the ratings was 4.33. Definitely more than half of the respondents (56.10%) rated the importance of the speed of response to customer needs as 5. The coefficient of variation was relatively low and amounted to 21.31%. The study also shows that the perception of this factor did not differ significantly among food and beverage producers, as well as among companies with small, medium and long experience on the market. We may also see the positive relationship between responding to customer needs and business results in studies on other industries/markets, including the Vietnamese market and the seafood market (*e.g*., Nguyen & Barrett, 2006; Nguyen *et al*., 2006; Nguyen & Khoa, 2020). As Skyrius and Valentukevi (2021) note, companies that can respond quickly to changes often have a competitive advantage because they can take advantage of new opportunities before their competitors do.

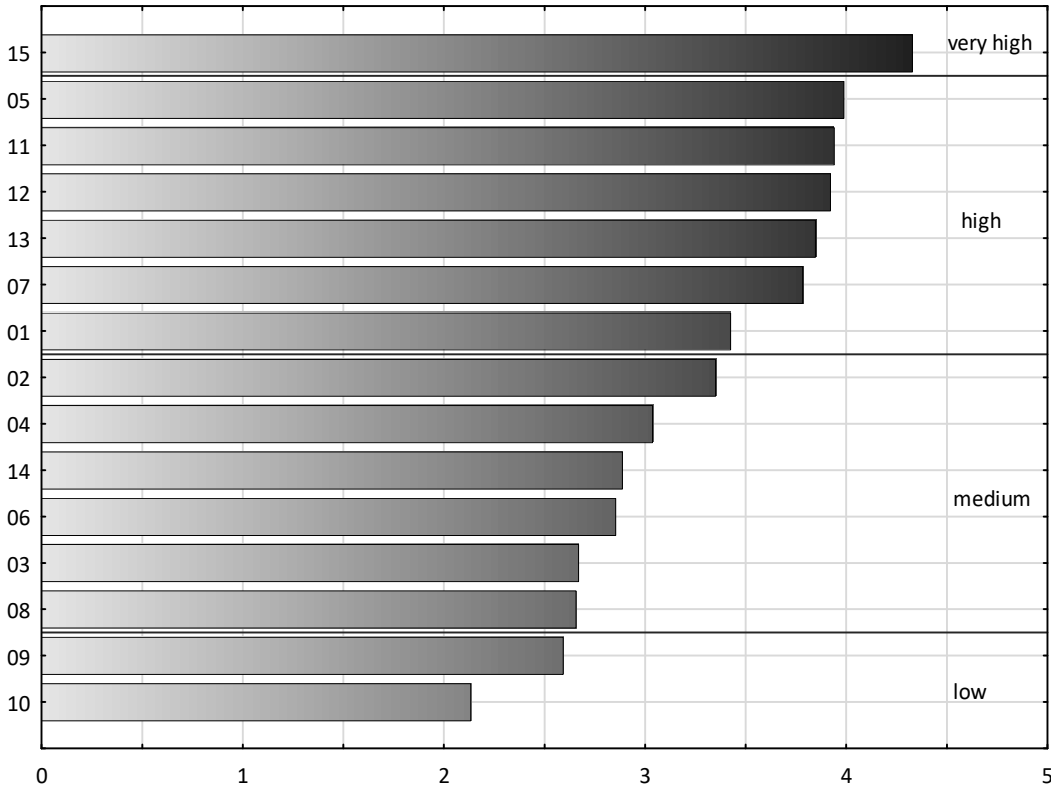


Figure 1. Ranking of the importance of factors related to the market offer on the competitiveness of food industry enterprises according to the arithmetic mean
Source: own elaboration based on research.

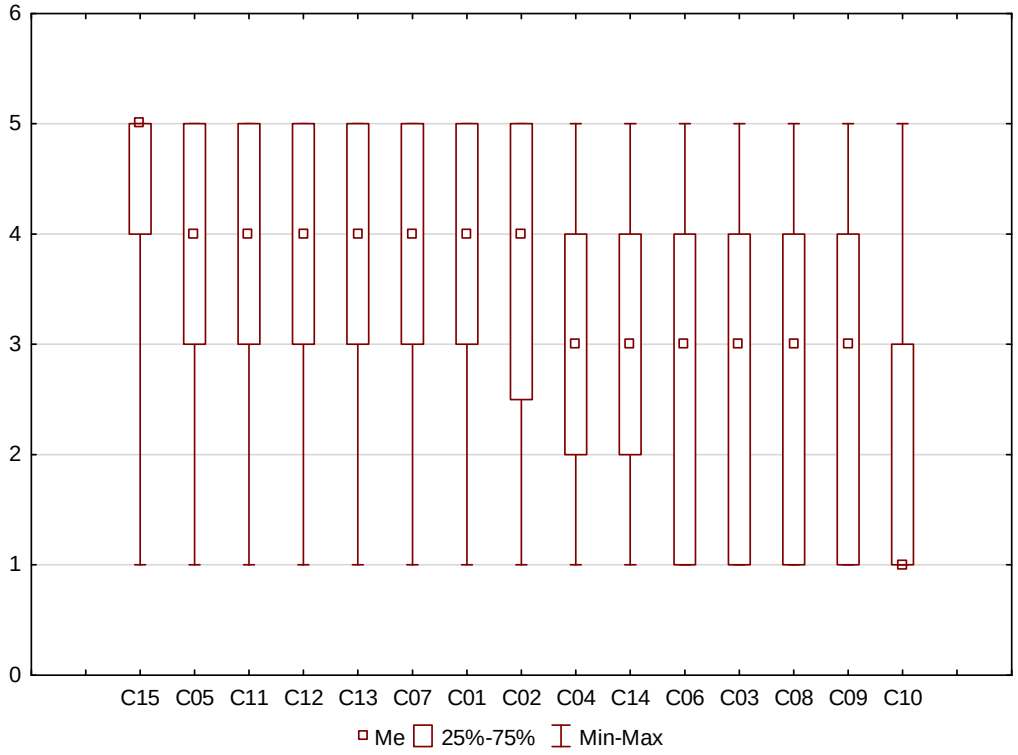


Figure 2. Box-plot charts for assessing the importance of factors related to the market offer on the competitiveness of food industry enterprises
Source: own elaboration based on research.

Factors of High Importance in Building International Competitiveness

Respondents attributed high significance in building international competitiveness to such elements as the development of traditional food (C05), diversity of the commercial offer (C11), development and popularisation of own brands (C12), creation of a product brand with unique values for the consumer (C13), and promotion of local products (C07). The arithmetic mean of the ratings was at the level of 3.78-3.99. The most common rating was 5 (38.00-44.70%). The median indicates that 50% of respondents rated the importance of these factors at least 4. The group of factors of high importance also includes the development of functional foods due to the growing interest in health-promoting food (C01). The arithmetic mean in this case was 3.43, and the median and mode were 4.

Moreover, based on the Mann-Whitney test, I observed significant differences in the perception of the importance of the development of traditional food (C05), the creation of a product brand with unique values for the consumer (C13), and the development of functional food (C01) among food producers and beverage producers. Based on the arithmetic mean and positional measures presented in the box-plot charts, we can assume that food producers attributed greater importance to the development of functional food and the development of traditional food. In the group of food producers, the arithmetic mean of the ratings of these factors was 3.46 and 4.06, respectively, and the median was 4. In the group of beverage producers, the arithmetic mean of the ratings of both factors was 2.68, and the median was 3. On the other hand, beverage producers attributed relatively greater importance to creating a product brand with unique values for the consumer. The arithmetic mean in the first group was very high and amounted to 4.58, while in the second group it was 3.81. The results of the Kruskal-Wallis test indicated differences in the assessment of the importance of the development of traditional food (05), the diversity of the commercial offer (C11) and the promotion of local products (C07) depending on the company's seniority. Based on the multiple comparison tests, I observed that the importance of the development of traditional food was significantly lower among companies with long seniority than in those with medium seniority, and the importance of the promotion of local products was significantly higher in companies with short seniority than in companies with medium seniority. This is also confirmed by box-plot charts. The multiple comparison test did not provide an unambiguous answer as to which groups differ in terms of the diversity of the commercial offer. However, based on positional measures, we can assume that the greatest importance was attributed to this factor by respondents representing companies with a small experience (arithmetic mean 4.09, median 4.5).

Jakubowska is one of the authors who studied the development of traditional food on the Polish market (*e.g.,* Jakubowska *et al*., 2023). These studies show that providing access to traditional food products in a larger number of points of sale accelerates development, while the lack of mass distribution is perceived as the main barrier to further expansion. Moreover, producers who offer traditional food products should pay attention to the diversity of buyers' expectations, because competition on the market will intensify with the increase in their availability. The importance of diversifying the market offer is also confirmed by Osiekowicz and Sierodzka (2024) in research conducted using an online survey among young people. They indicate that the diversity of the assortment is important for consumers, and sellers should strive to offer a wide range of products to attract and retain customers. Ciechomski (2018) indicates that it is possible to obtain benefits from the development of private labels by producers, as well as trading companies and consumers. According to this author, the production of private labels allows for an increase in the scale of production, improvement of the brand's position, use of free production capacities, and indirectly gaining a competitive advantage. Low-priced private labels are most often developed. Sometimes, products with luxury product features are introduced, but also at prices lower than the corresponding branded products. Another way to increase competitiveness may be to offer a unique product (Kuncoro & Suriani, 2018; Wibowo *et al*., 2024). As Bryła (2015) notes, the uniqueness of the product may be a distinguishing feature of the offer, as well as protection against imitation and lead to the development of economic structures and behaviours characteristic of monopolistic competition. It may result from production methods, forms of distribution or the sensory profile of the food product. Bryła (2015) also indicates that for agri-food processing companies, using the niche of demand for local

products is a way to increase sales, rapid development, greater profitability, and diversification of operations. Studies by various authors show that the functional food market is a developing market. However, as indicated by Çakiroğlu and Uçar's research (2018) among 1182 consumers using 18 functional foods on the Turkish market, increasing sales of this type of product can be additionally achieved through communication with consumers and even implementing educational programs. The research by Çakiroğlu and Uçar (2018) and the research by Ares *et al*. (2008) conducted on the Uruguayan market confirm that knowledge clearly increases consumer interest in functional food.

Factors of Low Importance in Building International Competitiveness

In the conducted study, respondents attributed low importance in building international competitiveness to the development of products related to the fashion for a specific diet (*e.g.*, lactose-free, gluten-free) (C09) and the development of products imitating animal products (C10). The arithmetic mean of the ratings of these factors was 2.13-2.59. These factors were characterised by the relatively greatest diversification of responses. The coefficient of variation was 55.00%-63.38%. The results of the Mann-Whitney test indicate differences in the assessment of the importance of the development of products imitating animal products among food producers and beverage producers. The arithmetic

Table 2. Mann-Whitney test results and arithmetic mean of assessing the importance of factors related to the market offer on competitiveness of food industry enterprises by subsector

Component	Subsector	Mann-Whitney test			Arithmetic mean
		Sum of rank	Z	p	
C01	F	68 195.50	2.01088	0.04434**	3.46
	B	2 680.50			2.68
C02	F	67 868.50	1.27603	0.20195	3.38
	B	3 007.50			2.84
C03	F	68 006.50	1.59101	0.11161	2.70
	B	2 869.50			2.16
C04	F	68 027.00	1.62568	0.10402	3.07
	B	2 849.0			2.47
C05	F	68 976.50	3.87887	0.00010***	4.06
	B	1 899.50			2.68
C06	F	67 581.50	0.63841	0.52321	2.87
	B	3 294.50			2.63
C07	F	66 914.00	-0.86158	0.38892	3.78
	B	3 962.00			3.89
C08	F	67 323.50	0.06365	0.94925	2.66
	B	3 552.50			2.63
C09	F	67 766.50	1.05911	0.28955	2.61
	B	3 109.50			2.26
C10	F	68 024.50	1.70241	0.08868*	2.16
	B	2 851.50			1.58
C11	F	67 017.00	-0.63173	0.52756	3.94
	B	3 859.00			4.05
C12	F	66 760.50	-1.21763	0.22336	3.91
	B	4115.50			4.21
C13	F	66 068.00	-2.78251	0.00539***	3.81
	B	4 808.00			4.58
C14	F	65 817.50	-3.27580	0.00105***	2.84
	B	5 058.50			3.84
C15	F	66 967.50	-0.78987	0.42960	4.32
	B	3 908.50			4.53

Notes: F – food producers, B – beverage producers; ***, ** and * significances at the 0.01; 0.05 and 0.1 levels, respectively
Source: own study in STATISTICA.

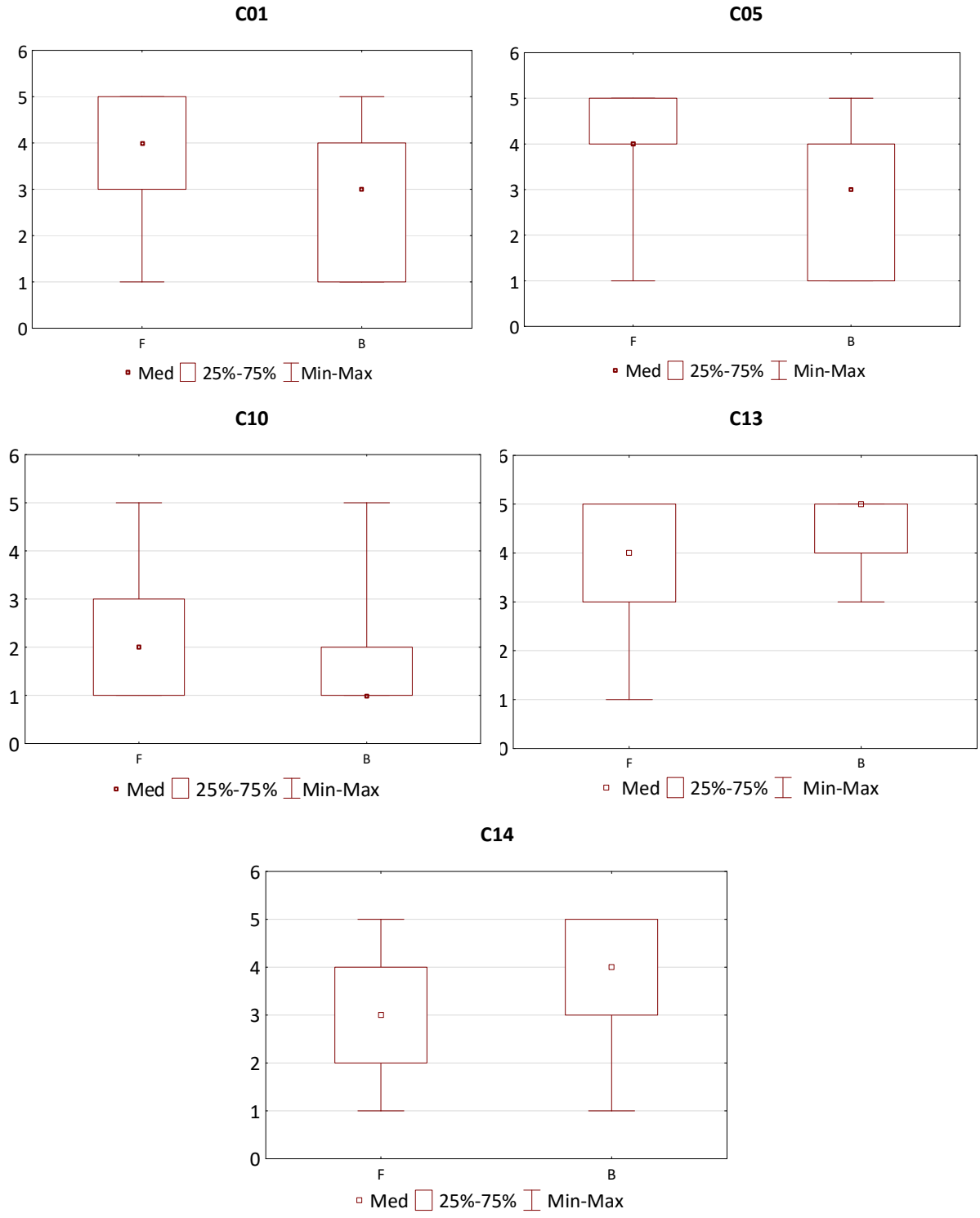


Figure 3. Box-plot charts of assessing the importance of selected factors related to the market offer on the competitiveness of food industry enterprises by subsector
Source: own elaboration based on research.

mean and positional measures indicate that food producers rated their importance higher. In this group, the arithmetic mean of the scores was 2.16, the median was 2, and the upper quartile was 3. Moreover, I found no statistically significant differences in the perception of these factors among companies with small, medium, and long experience on the market. The literature on the subject emphasises the systematic development of the market for both products related to the fashion for a specific diet (*e.g.*, lactose-free, gluten-free), as well as imitating animal products (*e.g.*, Kulshrestha,

2022; Szenderak *et al*., 2022). Therefore, it seems that in the future, they may have the potential to create a competitive advantage for food companies on the market.

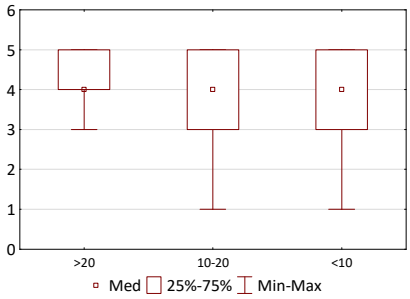
Table 3. Kruskal-Wallis test results and arithmetic mean by assessing the importance of factors related to the market offer on the competitiveness of food industry enterprises by age

Component	Age	Kruskal Wallis test				Arithmetic mean
		Sum of rank	Mean of rank	H	P	
C01	<10	54 652.00	187.98	3.885	0.143	3.41
	10-20	10 208.50	164.65			3.11
	>20	54 652.00	193.80			3.50
C02	<10	6 381.00	199.41	3.718	0.156	3.47
	10-20	10 244.00	165.23			3.03
	>20	54 251.00	192.38			3.41
C03	<10	6 361.00	198.78	1.757	0.415	2.81
	10-20	10 732.00	173.10			2.47
	>20	53 783.00	190.72			2.70
C04	<10	6 648.50	207.77	2.368	0.306	3.28
	10-20	10 743.50	173.28			2.82
	>20	53 484.00	189.66			3.06
C05	<10	5 743.00	179.47	10.990	0.004***	3.81
	10-20	9 357.00	150.92			3.52
	>20	55 776.00	197.78			4.11
C06	<10	6 736.50	210.52	6.221	0.045***	3.16
	10-20	9 926.50	160.10			2.47
	>20	54 213.00	192.24			2.90
C07	<10	7 095.00	221.72	5.147	0.076*	4.19
	10-20	10 568.50	170.46			3.55
	>20	53 212.50	188.69			3.79
C08	<10	6 214.50	194.20	0.424	0.809	2.72
	10-20	11 228.00	181.09			2.56
	>20	53 433.50	189.48			2.67
C09	<10	6 488.00	202.75	2.039	0.361	2.78
	10-20	10 723.00	172.95			2.39
	>20	53 665.00	190.30			2.62
C10	<10	5 602.50	175.08	1.286	0.526	2.00
	10-20	11 177.00	180.27			2.00
	>20	54 096.50	191.83			2.18
C11	<10	6 714.50	209.83	5.024	0.081*	4.09
	10-20	10 181.00	164.20			3.69
	>20	53 980.50	191.42			3.98
C12	<10	6 370.50	199.08	0.990	0.61	4.00
	10-20	11 046.00	178.16			3.82
	>20	53 459.50	189.57			3.94
C13	<10	6 776.50	211.76	1.772	0.412	4.09
	10-20	11 635.00	186.04			3.84
	>20	52 464.50	187.66			3.82
C14	<10	6 628.50	207.14	3.978	0.137	3.13
	10-20	10 291.50	165.99			2.61
	>20	53 956.00	191.33			2.92
C15	<10	6 426.00	200.81	1.774	0.412	4.47
	10-20	10 851.50	175.02			4.24
	>20	53 598.50	190.07			4.33

Notes: F – food producers, B – beverage producers; ***, ** and * significances at the 0.01; 0.05 and 0.1 levels, respectively.
Source: own study in STATISTICA.

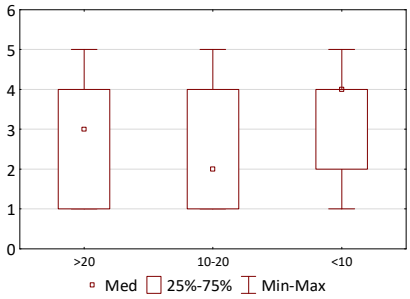
Multiple comparison test (p-value)			
Age	<10	10-20	>20
<10	-	0.682545	1.000000
10-20	0.682545	-	0.006330***
>20	1.000000	0.006330	-

C05



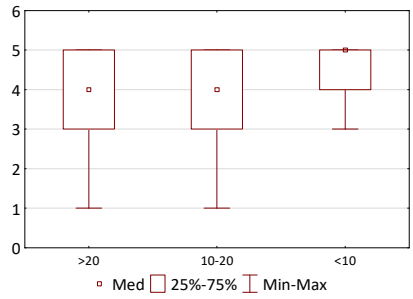
Multiple comparison test (p-value)			
Age	<10	10-20	>20
<10	-	0.099300	1.000000
10-20	0.099300	-	0.105042
>20	1.000000	0.105042	-

C06



Multiple comparison test (p-value)			
Age	<10	10-20	>20
<10	-	0.090768	0.310077
10-20	0.090768	-	0.694791
>20	0.310077	0.694791	-

C07



Multiple comparison test (p-value)			
Age	<10	10-20	>20
<10	-	0.16145	1.000000
10-20	0.161455	-	0.222852
>20	1.000000	0.222852	-

C11

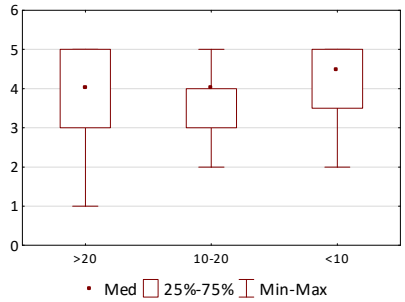


Figure 4. Multiple comparison tests and box-plot charts of assessing the importance of selected factors related to the market offer on the competitiveness of food industry enterprises by age

Notes: F – food producers, B – beverage producers.

Source: own elaboration.

CONCLUSIONS

In the current rapidly changing environment, gaining and maintaining competitiveness is a dynamic process that requires considering many factors. The study filled the cognitive gap in the scope of the importance of shaping the market offer from the perspective of the competitiveness of food entities. The original empirical study conducted shows that, according to the representatives of food enterprises, the

application of some solutions in this area may be important in building the competitiveness of food industry enterprises in the international arena. The added value of the study was also the gradation of selected solutions and the assessment of whether their introduction has very high, high, medium, low or very low importance from the point of view of the enterprise. According to the representatives of food enterprises, quick response to customer signals is very important in building competitiveness. Solutions such as the development of traditional food, introduction of diversity of the commercial offer, development and popularisation of own brands, creation of a product brand with unique values for the consumer, promotion of local products, as well as development of functional food will have a high impact. The study also provides evidence of the relationship between the development of organic food, minimally processed food, prosumption, personalisation of food products, the development of convenient food, food that limits calorie consumption and the international competitiveness of enterprises. This relationship was defined as a medium. The least importance was attributed by respondents to the development of products related to the fashion for a specific diet (*e.g.*, lactose-free, gluten-free) and the development of products imitating animal products. I also observed that compared to beverage producers, food producers attributed greater importance to the development of functional food, traditional food, products imitating animal products, and animal products. In turn, beverage producers attributed greater importance to creating a product brand with unique values and prosumption. I also found that the importance of the development of traditional food is significantly lower among long-established enterprises than in those with medium experience, and the importance of promoting local products and personalising food products is significantly greater in enterprises with short experience than in enterprises with medium experience. In companies with a small experience, the diversity of the market offer was also given greater importance than in the others.

The formulated conclusions are a contribution to the literature on the subject and have an application value. Defining the factors that contribute to improving the competitiveness of food industry companies on the market should be useful for managers involved in formulating the company's strategy, including the competitive strategy. Implementing appropriate solutions related to shaping the market offer will allow for obtaining many benefits (*e.g.*, standing out on the market, increasing the value of the offer, building customer loyalty and satisfaction, increasing demand) and improving competitiveness.

When considering the results of the conducted research, it is also necessary to consider potential limitations resulting from, *e.g.*, the methodology or selection of variables. Noteworthy, in the conducted study, the factors considered related to the market offer do not exhaust the list of potential factors influencing the competitiveness of companies and the industry. However, creating a full list of factors related to the market offer seems difficult and certainly requires significantly extended research. Moreover, in addition to factors related to the market offer, other studies should consider factors related to innovation, competitive potential, contemporary economic processes, or macroeconomic conditions. The study also did not consider the full profile of the companies' activities. Future studies could investigate, for example, the size of the company, the market in which it operates, and the type of production conducted. Furthermore, in-depth individual interviews could answer the question of what are the reasons for the established hierarchy and why the importance of specific factors was considered very high, high, medium and low. The presented analyses should therefore be treated as part of the research on the factors of international competitiveness of food and beverage companies and the entire food industry.

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Use of Artificial Intelligence

I hereby declare that the article is free from the use of Artificial Intelligence (AI) or Generative AI (GAI) tools in its preparation, writing, analysis, and interpretation. All ideas, arguments, and writings are the result of the author's own work and critical engagement with relevant academic sources.

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