

FOOD CHOICE CRITERIA IN THE ERA OF GLOBAL CRISIS

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Purpose: The aim of this research is to check how the external factors, for example the pandemic or high inflation rate, influence the behavior of food consumers.

Design/methodology/approach: The main method was the survey questionnaire conducted among 2000 consumers in Poland on a representative sample.

Findings: The external factor such as the pandemic influenced the change of consumer behavior when it comes to the food choice. Usually consumers considered less characteristics of food, but the main food choice criteria remained almost the same, such as: best before date, price, ingredients and the country of origin.

Research limitations/implications: The results are limited to the Polish market, however can be continued and expanded for other external factors and other markets.

Practical implications: The results of this study show how the participants of the food market should be prepared for various crisis.

Originality/value: This paper shows how the external conditions of various sources can influence and change the food market and consumers behavior. It is addressed to researchers and professionals operating in food market, food choice, consumers behavior.

Keywords: food choice, food, consumers, consumer behavior, pandemic.

Category of the paper: Research and review paper.

1. Introduction

The recent global crises are an important determinant of food choices, while shaping current and future consumer behavior (Kirk, Rifkin, 2010; Fitzpatrick et al., 2020; Laborde et al., 2020). Nowadays, with the identification of several complex global crises, described in the literature of the subject as the multiplication of crises (crisis network) (Mączyńska, 2022), the space in which the contemporary consumer operates is characterized by a high degree of instability and

a great dynamic of change, and “new” or “alternative” consumer trends interpreted as objective and occurring over a longer time horizon directions of general consumer choices, behaviors and preferences, are a consequence of socio-political, legal, cultural, demographic and technological changes that are permanently taking place today in the market environment.

Van Bavel et al. (2020) report that every crisis is the engine of behavioral change and the uncertainty that accompanies it affects consumer behavior during a crisis. The changes that people face in their everyday lives, combined with uncertainty, pose a health, economic, social, information or environmental threat to consumers. Depending on the perceived scope of these risks, each crisis causes distortions in consumer practices and routines. Cognitive responses to crises and related political actions can influence behavioral responses, suggesting, for example, that contemporary consumers are more likely to prefer specific groups of products that help them cope with helplessness, stress, or compensate for a sense of loss of control over their existence.

Trommsdorff (2004), Balderjahn and Scholderer (2007) and Foscht and Swobody (2007) identified two groups of consumer behavior determinants: individual factors (psychological, internal) and social factors (environmental, external).

It is worth pointing out here that eating habits, including dietary choices, are the result of a specific “mix” of different factors, including personal, cultural, socio-economic, biological (genetic origin, intestinal microflora) and toxicological (toxicological load, concentrations of essential substances, microelements, etc.). The integration of these factors and their priority levels results in food choices that exhibit a high level of interpersonal variability and play a major role in shaping food choice purchasing decisions (Barosh et al., 2014; Homenko et al., 2010; Rangel, 2013; Shanks et al., 2017; Whitelock, Ensaff, 2018). Recent research has also shown that it is primarily emotions that play a key role in times of crisis. For some consumers, high levels of stress correlated with emotional eating, and food choices associated with stress were associated to mood and comfort of consumers (Shen et al., 2020; Niewczas-Dobrowolska et al., 2024).

Food prices and individual personal preferences are most often described by some authors as the factors that currently shape the food choices of modern consumers, which is consistent with previous qualitative studies identifying similar factors, such as taste, economic or health considerations (Akbulaev et al., 2020; Aschemann-Witzel, Zielke, 2017; Livne, 2021; Zoellner et al., 2012; Verain et al., 2012). Food prices have a major impact on food choices and are a barrier to healthy eating for people suffering from food insecurity (Barosh et al., 2014; Brady et al., 2022; Shanks et al., 2017; Sheoran, Kumara, 2020; Wang et al., 2019).

The aim of this paper is to indicate the main food choice criteria as well as their changes due to the external factor (the pandemic).

2. Methods

The research process consisted of the following stages: developing research methodology, consultation of the research tool, sample selection, implementation of the measuring phase of the survey, developing a statistical report, elaboration of a final report. The research was made by a professional company operating in quantitative research method. Information on the assumed scope of the study was obtained through the use of a tool - a quantitative questionnaire. The questionnaire was built of closed-typed questions. The sample consisted of 2000 people selected taking into account the place of residence (region), gender and age. Respondents were asked to indicate the food choice criteria. The survey was made twice: in 2020 and in 2022 to show how the external risk influence the food choice. In order to put the pandemic in Poland on a timeline, it is worth noting that the first case of COVID-19 in Poland was reported on the 4th of March 2020, in May 2022 was the official end of the pandemic. Respondents were also characterized in terms of education and material status and the role during the food purchase. The study was carried out using the CAWI (Computer Assisted Web Interviewing) technique based on conducting a computer-supervised internet survey. Numeric variables were characterized using basic descriptive statistics: cardinality (N), arithmetic mean (mean), standard deviation (SD), median, lower and upper quartile (IQR), minimum and maximum values (range). Categorical variables are presented in terms of numbers and interest. Group comparisons were made using the Kruskal-Wallis or U Mann-Whitney test (for continuous variables) and the Chi-square test or Fisher test (for categorical variables). The value of significance (p) was set at 0.05. Calculations were made in the R program (ver. 3.5). 2000 respondents took part in each of these two surveys. The characteristic of the respondents reflects the structure of the population of adult Poles residing in the country of the gender, age and region of residence (Figure 1-5).

The respondents were also grouped by their engagement if food shopping (Fig. 6). Because of the COVID-19 pandemic in the survey made in 2022 the additional socio-characteristic was added – Perceived Stress Scale (Cohen et al., 1983), and also the case of trust as trust plays an important role during various crises (Fig. 7 and Fig. 8). It is one of the most commonly used tools to measure perceived stress (Mondo et al., 2021). The perceived stress influences consumers decisions and also the perception of high food quality and may result in i.e. searching for the objective proofs of high food quality such as for example the certificates. Consumers were asked to assess their level of stress.

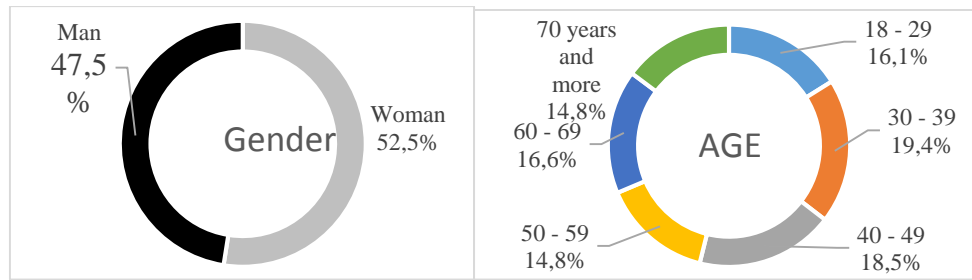


Figure 1. Characteristics of respondents in 2022 – the gender and the age.

Source: own elaboration.

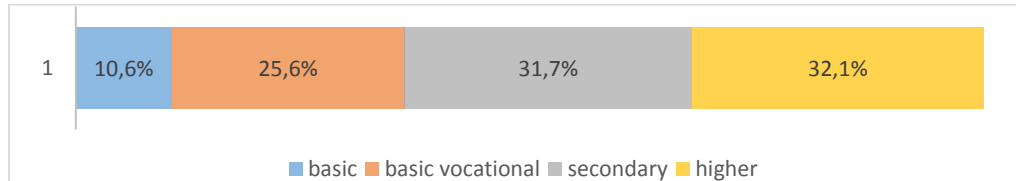


Figure 2. Characteristics of respondents in 2022 – the level of education.

Source: own elaboration.

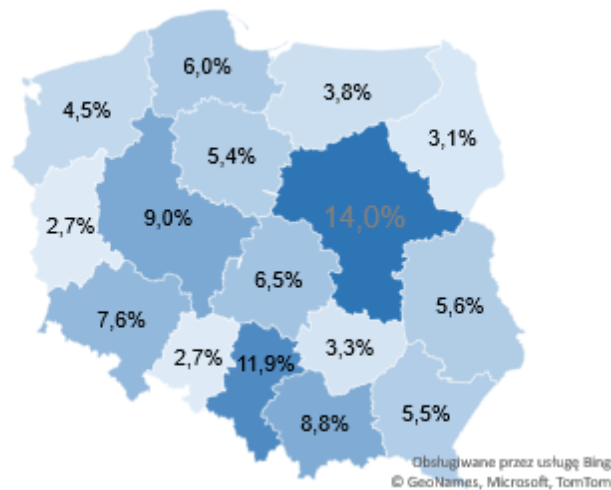


Figure 3. Characteristics of respondents in 2022 – the region of residence.

Source: own elaboration.

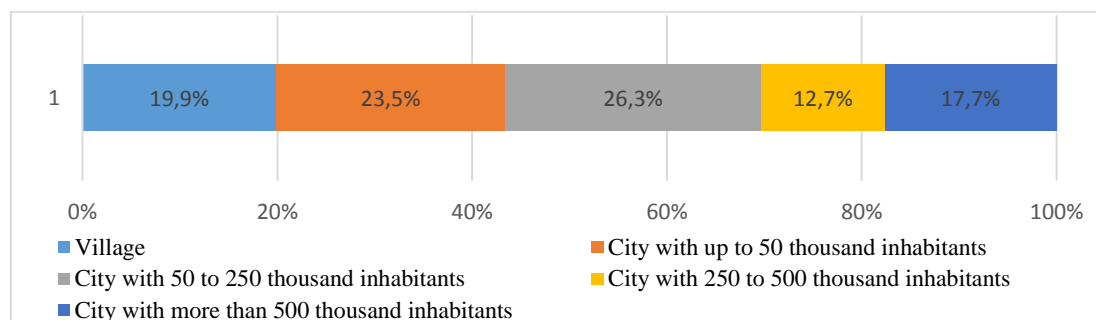


Figure 4. Characteristics of respondents in 2022 – the place of residence.

Source: own elaboration.

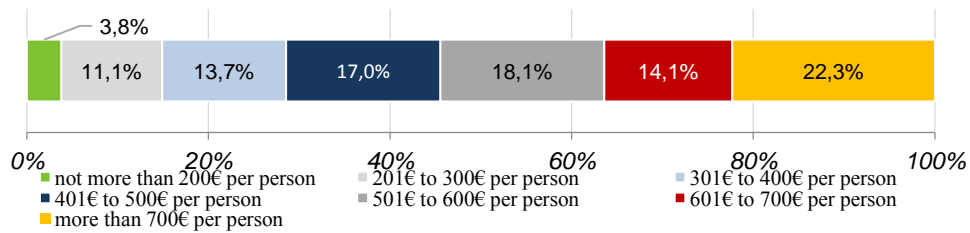


Figure 5. Characteristics of respondents in 2022 – the monthly income.

Source: own elaboration.

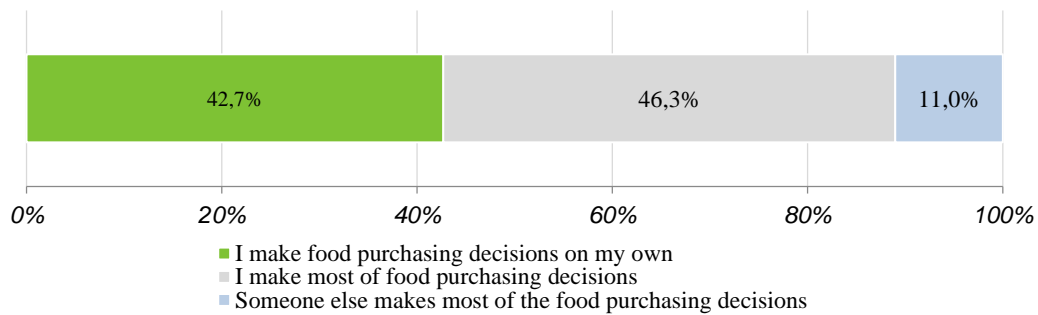


Figure 6. Characteristics of respondents in 2022 – responsibility for the buying decisions.

Source: own elaboration.

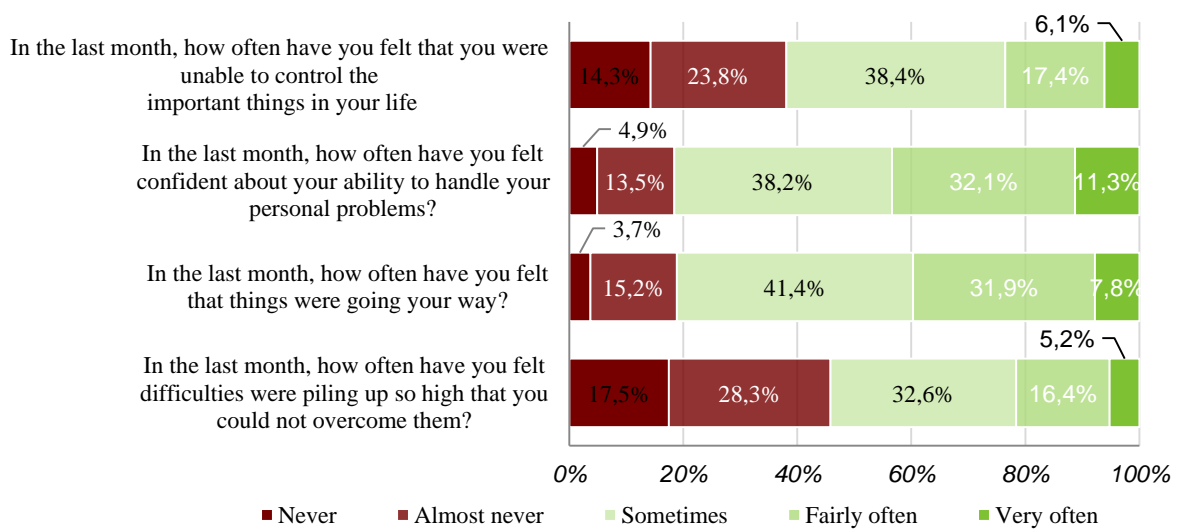


Figure 7. Characteristics of respondents in 2022 – perceived stress.

Source: own elaboration.

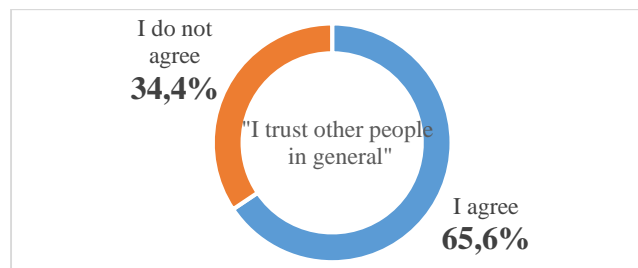


Figure 8. Characteristics of respondents in 2022 – trust.

Source: own elaboration.

3. Results and discussions

The top three food choice criteria indicated by consumers in 2022 were: use by dates/best before, price and ingredients (Fig. 9). In 2020 they were: ingredients, use by dates/best before and price. The answers varied only on the basis of the education level, so consumers with higher education level more often paid attention to the list of ingredients than other consumers (Table 1).

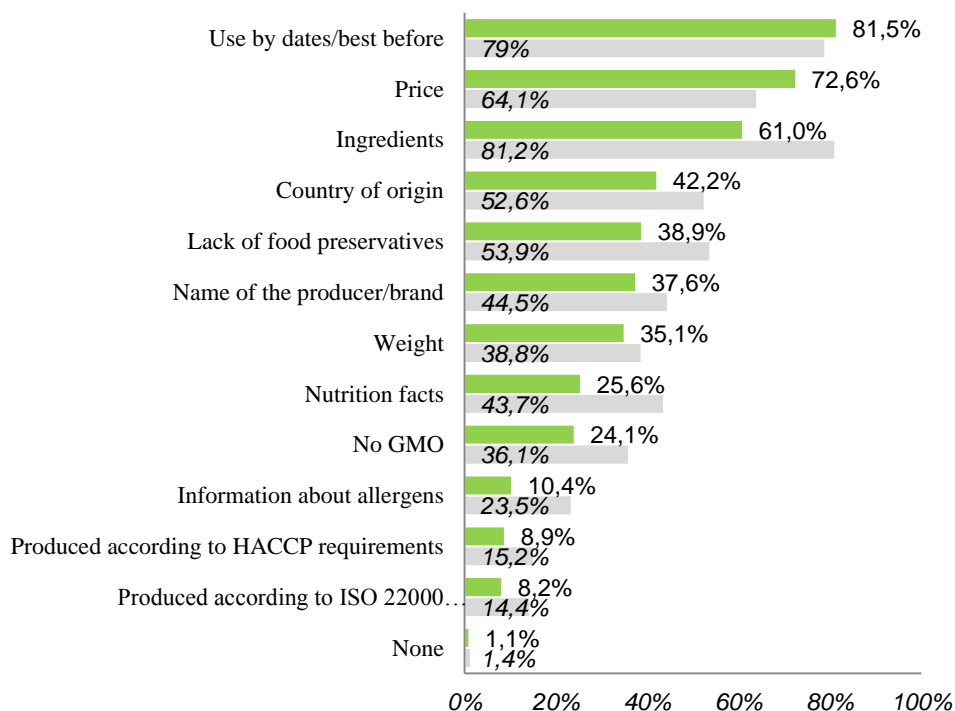


Figure 9. Food choice criteria in 2020 (in grey) and in 2022 (in green).

Source: own elaboration.

Table 1.

Importance of the level of education on the basis of Pearson's Chi-squared test

Food choice criterion	p-value	Importance
Use by dates/best before	0,30088	
Name of the producer/brand	0,05651	
Country of origin	0,07117	
Weight	0,01074	*
Ingredients	0,00014	***
Produced according to HACCP	0,39649	
Produced according to ISO 22000	0,41350	
No GMO	0,13034	
Lack of food preservatives	0,00840	**
Price	0,69623	
Information about allergens	0,02200	*
Nutrition facts	0,72670	
None	0,32413	

Source: own elaboration.

The answers varied on the basis of some PSS characteristics (Table 2 and Table 3). Consumers who felt the ability to cope with problems and being sure that things go their way more often consider country of origin, information about ISO 22000, the lack of GMOs, information about food allergens as well as the price while food choosing.

Table 2.

Importance of being sure to cope with personal problems (PSS) on the basis of Pearson's Chi-squared test

Food choice criterion	p-value	Importance
Use by dates/best before	0,21527	
Name of the producer/brand	0,04298	*
Country of origin	0,00067	***
Weight	0,00550	**
Ingredients	0,00597	**
Produced according to HACCP	0,00683	**
Produced according to ISO 22000	4,94367E-06	***
No GMO	0,00006	***
Lack of food preservatives	0,10692	
Price	0,00027	***
Information about allergens	0,02123	*
Nutrition facts	0,35204	
None	0,04079	*

Source: own elaboration.

Table 3.

Importance of being sure that things were going your way (PSS) on the basis of Pearson's Chi-squared test

Food choice criterion	p-value	Importance
Use by dates/best before	0,03767	*
Name of the producer/brand	0,09536	
Country of origin	0,05694	
Weight	0,12441	
Ingredients	0,01506	*
Produced according to HACCP	0,00531	**
Produced according to ISO 22000	0,00296	**
No GMO	0,02561	*
Lack of food preservatives	0,09686	
Price	0,00010	***
Information about allergens	0,00040	***
Nutrition facts	0,15134	
None	0,05099	

Source: own elaboration.

When we look at the most often mentioned food choice criteria in 2022 we can conclude they were usually lower than the number of food choice criteria two years ago (in 2020), however the top three criteria remains the same as: best before/use by date, price and ingredients. It shows that beside the crisis caused by the external factor (the pandemic) consumers did not change their preferences as general. On the other hand, in previous research (in 2020) the answers varied on the basis of more socio-economic characteristics. Young people aged 18 to 29 were less likely than other respondents declared to pay attention to information

about the country of origin, information about the lack of genetically modified ingredients or information about the lack of preservatives. Information about the lack of preservatives was also less frequently sought by respondents with low net income per person. The group of people who paid particular attention to information about the lack of preservatives were people with higher education. Statistically significant differences were noticed in the shopping habits of people who make purchasing decisions on their own. In their case, important information was about: country of origin, occurrence of allergens, production in accordance with HACCP principles, production in accordance with the principles of ISO 22000. It is worth to add that in 2022 consumers consider less criteria to choose food product what could also be caused by the limited time to do the shopping due various limitation to prevent the spread of the virus. They just use the standard and common food choice criteria. Consumers were also less diverse in their choices, only the level of education differentiated their choices. It is interesting that consumers who felt less stress due to the pandemic looked at more criteria and their choices were differentiated on the basis of various criteria (Table 2 and 3). When we look at answers of consumers who felt stress due to the pandemic it can be concluded the main criterion was use by date/best before information (Table 4).

A study carried out in France showed that some participants had an improvement in the quality of their diet, while others had a deterioration or remained unchanged during the pandemic (Deschasaux-Tanguy et al., 2019). In contrast, studies conducted in Canada on the adult population showed a slight improvement in the quality of the diet during the early phase of restrictions (Lamarche et al., 2021). On the contrary, a cross-sectional study conducted by Alhusseini and Alqahtani (Alhusseinis, AlQahtani, 2020) shows that the quality of the food consumed has improved significantly.

Table 4.

PSS - How often in the last month did difficulties pile up so high that you could not overcome them? on the basis of Pearson's Chi-squared test

Food choice criterion	p-value	Importance
Use by dates/best before	2,9863E-06	***
Name of the producer/brand	0,80256	
Country of origin	0,29984	
Weight	0,05844	
Ingredients	0,00966	**
Produced according to HACCP	0,00254	**
Produced according to ISO 22000	0,01564	*
No GMO	0,29687	
Lack of food preservatives	0,20384	
Price	0,02168	*
Information about allergens	0,00268	**
Nutrition facts	0,80497	
None	0,20336	

Source: own elaboration.

Analysis of the importance of certain characteristics of food products purchased by consumers during the pandemic showed that, for example, German consumers indicated the following types of food: stable shelf life, healthy food, regional origin, good taste, country of origin and lower prices. Other results of a study with German consumers conducted by Klaver et al., (2020) confirmed the above conclusions, stating that more and more consumers are buying and sourcing food from local producers than before the Covid-19 pandemic. Concerns about food shortages, the perception of global food supply chains as less robust and secure, and the avoidance of large crowds have led consumers to increasingly turn to local and small food chains or initiatives (Campbell et al., 2020; Galimberti et al., 2020; Hobbs, 2020; Leone et al., 2020; Schmidt et al., 2020). Undoubtedly, the outbreak of the Covid-19 pandemic and its associated actions have led to changes in food choices and consumer behavior. McFadden and Malone (2020) and Schmidt et al. (2020) that American consumers have become increasingly interested in producing their own food, as well as obtaining food locally, while collecting food stocks. Some studies also assessed the choice of specific foodstuffs. For example, in a study conducted by Jribi et al. (Jribi et al., 2020), most respondents said that the blockages and restrictions associated with crises, especially the pandemic crisis, modified their list of shopping habits, improving its quality. Similarly, in the study of Di Renzo et al. respondents declared to buy organic food or directly from farmers (Di Renzo et al., 2020), In addition, a study by Bracale and Vaccaro showed a higher frequency of buying fruit and vegetables (Bracale et al., 2020).

Orders, blockages and restrictions on consumers' behavior have reduced their mobility while increasing anxiety (Flanagan et al., 2020; Kirk, Rifkin, 2020). In a review discussing the current determinants of food choices, Leng and others found that food consumption is driven by various emotional states, such as stress (Leng et al., 2017; Smaira et al., 2021). Stress is an important factor in shaping certain eating habits and determines food choices for some consumers – both quantitatively and qualitatively (e.g. “eating”, “replacing meals with snacks” or “increasing food supply”) (Mazzolani et al., 2020). The stress caused by the currently identified crises is undoubtedly escalating anxiety and mood disorders not only in individual individuals but even in entire populations (Ben Hassen et al., Caroppo et al., 2021; Di Renzo et al., 2020; Lima et al., 2020; López-Moreno et al., 2020; Sánchez-Sánchez et al., 2020; Slurink et al., 2022), ultimately determining the food choices.

As we can conclude from the above considerations over the last four years (2020-2023), consumer behavior is determined by a number of factors, both objective and subjective. Recent years have shown that the COVID-19 pandemic has been one of the main factors (Consumers and the New Reality, 2020, Global Consumer Experience Survey 2020, Loxton et al., 2020). In addition to the basic purchasing criteria, such as price, availability and convenience, a new criterion has emerged - hygiene (Prasetyo et al., 2021), in the face of which consumer safety has become extremely important, including the safety of the food they buy. The criterion of self-security has gained new significance in the consumer's interpretation of

the food market (Soon et al., 2021; Loxton et al., 2020; Zandi et al., 2020; Joia, Lorenzo, 2021). Consumer preferences have shifted towards local brands (Khalek, Ismail, 2015; Scuderi et al., 2016; Sumarliah et al., 2021), and the percentage of spontaneous purchases has decreased, while the proportion of scheduled purchases increased (Eger et al., 2021).

4. Conclusions

1. The external factor such as the pandemic influenced the change of consumer behavior when it comes to the food choice. Usually consumers considered less characteristics of food but the main food choice criteria remain almost the same, such as: best before date, price, ingredients and the country of origin. During the pandemic consumers indicated lower numbers of food choice criteria than before the pandemic. Almost the same number or higher number of indications was observed for the best before date and price. These are the two characteristics that can be noticed quickly so consumers didn't have to spend much time choosing the food products.
2. Consumers were very homogenous in their opinions as the level of education was the only one socio-economic characteristic that significantly varied the answers about paying more attention to the ingredients of the food products. No significant differences of answers were observed on the basis of the gender, age or income as it is usually shown in other papers and as it was in 2020.
3. The perceived level of stress influenced consumers indications. Consumers who were characterized by the lower level of stress usually indicated more food choice criteria such as: the country of origin, price, production according to ISO 22000 and no GMO, information about allergens. Consumers who felt the higher level of stress indicated less food choice criteria. It was mainly the best before date.
4. These changes could be caused by the implemented restriction of time spent for shopping. The other reason could be the buying the basic food products to be used for meals preparation at home (so for example consumers did not need to check the list of ingredients or other information on the food labels) or contrary, to reduce the level of fear and stress consumers bought more unhealthy food they know so there was no need to check various information on the food labels.
5. These results show the consequences of just a one external factor that influenced consumers food choices, it still remains open how other factors would influenced consumers behavior on the food market. This can be the subject of other studies.

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