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## Article

# Organic Food Consumption During the COVID-19 Pandemic. A Bibliometric Analysis and Systematic Review

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**ORGANIC FOOD CONSUMPTION DURING THE COVID-19 PANDEMIC.  
A BIBLIOMETRIC ANALYSIS AND SYSTEMATIC REVIEW**

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**Abstract**

The COVID-19 pandemic has generated multiple transformations globally, with isolation periods alternating with those marked by intense social and economic restrictions, having a major impact on economic production and distribution activities, but especially on consumer behaviour. The recent pandemic has generated a strong contraction in consumption, increasing consumers' risk aversion, and disrupting the way they purchase different foods. Consumers have shifted to sustainable consumption, preferring foods that can help them towards a balanced diet, strengthen their health, and help develop resistance to viruses. This paper aims to identify the most relevant specialised articles, published during the pandemic (2020-2023), addressing sustainable consumption of organic food. They are investigated through a bibliometric analysis, which highlights the main directions in which this international research has converged. In the investigative approach, the authors resort to applying the PRISMA methodology peculiar to this type of analysis; the references selected according to the different objective criteria chosen are subsequently analysed using the VOSviewer software. Based on the review of the literature, the paper also presents possible future research directions highlighting the opportunities for scientific capitalisation of this research topic.

**Keywords:** organic food, sustainable consumption, consumer behaviour, COVID-19 pandemic.

**JEL Classification:** E21, L66, Q560

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## Introduction

Sustainability or sustainable development is the process of managing natural resources in such a way that generations can cover their needs in a similar way to that of current generations (World Commission on Environment and Development (WCED), 1987; WHO, 2023). Sustainable development is based on an integrated approach, which considers both environmental issues and social and economic implications.

The COVID-19 pandemic has led to significant changes in consumer behaviour, through a clear orientation towards online procurement (McKinsey, 2020); consumers prefer orders from virtual stores and are increasingly using mobile apps and courier services (Andronie et al., 2021; Pop et al., 2023). Especially periods of isolation and restrictions have generated a spectacular increase in online orders for food and other goods (Koch et al., 2021). Paradoxically, the COVID-19 pandemic initially boosted stockpiling (Ahmadi et al., 2022) and overconsumption (Babbitt et al., 2021), but ultimately led to a decrease in consumption due to the financial instability of citizens, respectively, to the deterioration of their financial situation as a result of work interruption (Nemteanu et al., 2022), and the lack of predictability regarding the evolution of the pandemic caused by frequent lockdown periods (Grashuis et al., 2020). Practically, during the pandemic situation there was a lack of consumption predictability due to its self-imposed limitations, which alternated with compulsive behaviours such as making significant purchases of food goods for long periods of time and stockpiling. At the same time, there was a heightened predisposition to increase the consumption of fresh and *healthy* products; consumers probably associated them with immunity boosts and general well-being (Das et al., 2021; Pocol et al., 2021a; Sohn et al., 2022).

The present research aims to trigger the researchers' interest in exploring the specificities of the sustainable consumption of ecological foods, by proposing a systematic review. Thus, the objective of the paper is to identify the most representative specialised papers published during the recent COVID-19 pandemic that dealt with the sustainable consumption of organic food. In conducting the research, the authors employed the PRISMA method for the bibliometric analysis. This allows us to highlight the main directions of research on sustainable food consumption. The data are processed using VOSViewer software in the form of summative tables. Subsequently, a systematic analysis of the main directions of investigation is performed.

The article is structured as follows: Section 1 presents a review of the literature on sustainable consumption and organic food, followed by Section 2 containing the description of the research method used, based on the PRISMA approach. Here are the criteria for including and excluding the various bibliographic references in the analysis carried out in the two databases, Scopus and Web of Science. Section three presents the results of the bibliometric analysis, where the included references are categorised according to different criteria (type of research, number of citations, most frequently cited articles, journals in which they appeared, etc.). Subsequently, a systematic content analysis is performed on the particularities of sustainable consumption of organic food, the relevance of attitudes for sustainable consumption, and the evolution of sustainable consumption of organic food during the COVID-19 pandemic. The paper ends with conclusions, which contain possible future directions of research concerning the investigated phenomenon.

## 1. Literature review

Sustainable consumption is increasingly the subject of strategies established by international, regional, and national bodies. Thus, the European Union has included in the Maastricht Treaty the strategy of sustainable development, highlighting the need for the harmonious and balanced integration of the economic activities of organisations, so as to enable social and economic cohesion, solidarity between member states, employment, improving the quality of life, etc. (European Union, 2023). More recently, the EU has also developed a strategy on food sustainability, entitled *The Farm to Consumer Strategy*, which aims to create a sustainable food system that ensures food security, protecting nature, and individuals (European Commission, 2023; Pocol et al., 2023). The UN considers that sustainable consumption depends on sustainable production, with the aim of facilitating the satisfaction of basic needs and ensuring a high quality of life, by minimising the use of natural resources and toxic materials, reducing emissions of pollutants, and reducing the amount of waste so as not to endanger society as a whole (United Nations, 2022). After the OECD, sustainable consumption is achieved by streamlining energy and other resources, minimising food waste, and developing among consumers a mentality, respectively, a responsible behaviour with nature (Krizanova et al., 2019; OECD, 2023).

Although food systems have the potential to support consumer health and contribute to environmental sustainability, they remain a threat to them due to their overdevelopment, which puts pressure on production systems, namely, to ensure quantity to the detriment of food quality (Willett et al., 2019). In the production of sustainable and organic food, it is essential to consider the protection of the environment, so that there are no disturbances or imbalances in existing ecosystems (Popa and Dabija, 2019). Basically, organic food production systems must be sustainable from a social, economic, and financial perspective. Their transformation into such sustainable systems involves the careful cooperation and active involvement of the various stakeholders of the system: local authorities, producers, distributors/retailers, and consumers (Ruben et al., 2021; Gallardo Vasquez, 2023).

Organic foodstuffs are products controlled and certified by bodies empowered to do so (CE, 2023), intended for human consumption which are made according to agricultural methods and procedures which comply with very precise standards, without the use of synthetic chemical compounds or genetically modified organisms, contributing to the protection of nature and the support of biodiversity (PE, 2021). Depending on the geographical area in which organic food is produced, distributed or consumed, ecological foods are called 'bio' (Switzerland, France) or 'organic' (Anglo-American space); the literature uses these concepts alternatively (Popa and Dabija, 2019; Sabau et al., 2023). To facilitate the recognition of organic food by consumers, regardless of geographical area, they are marked accordingly, with the Euro-leaf, bearing the name and code number of the body which carried out the necessary checks and granted the certification (Lazaroiu et al., 2020; Majerova et al., 2020).

The literature (Coderoni et al., 2020; Fernandes and Saraiva, 2022) suggests that when it comes to regular purchases of organic food in conjunction with the market values of organic products, it acts as an incentive for consumption. The identity of these consumers and the knowledge of how they support sustainable consumption constitute the starting point for the transition to the circular economy.

Organic food consumption is influenced not only by objective factors, but also by psychological factors (Tarkiainen and Sundqvist, 2005; Basha et al., 2015; Wojciechowska-Solis et al., 2022). The researchers' interest was focused on studying the attitudes of

consumers of organic food, both on explicit and implicit attitudes (König et al., 2016; Richetin et al., 2016; Panzone et al., 2016; Pakseresht et al., 2022). Consumer behaviour oriented towards health and environmental protection can significantly contribute to sustainable economic development, social progress, and to the improvement of the quality of life (Paul and Rana, 2012; Wojciechowska-Solis et al., 2022). Additionally, consumer behaviour oriented towards environmental preservation is present in marketing research focused on current consumption trends in a sustainable society (Prothero et al., 2014; Joshi et al., 2015; Lu et al., 2023). Lim (2017) proposes the theorisation of three types of consumer behaviour: behaviour with a mindful mindset, behaviour focused on responsible consumption, and anti-consumption behaviour.

## 2. Research method

This paper aims to identify the most relevant specialised articles, published during the pandemic (2020-2023), in two of the most important bases of scientific articles, Scopus and Web of Science (WoS). The articles explored analyse the issue of sustainability of organic food consumption. Bibliometric analysis and systematic analysis were employed to investigate selected articles, to highlight how sustainable consumption of organic food is analysed in specialised articles.

The systematic analysis of literature is a valuable method for researchers, for accessing current relevant literature, evaluating existing theories and explanatory models, in order to identify new approaches designed to contribute to the advancement of research in the field. The analysis used the PRISMA model (Figure no. 1), deemed an important, relevant, and representative tool for creating systematic syntheses of literature in a wide variety of scientific fields (Page et al., 2021).

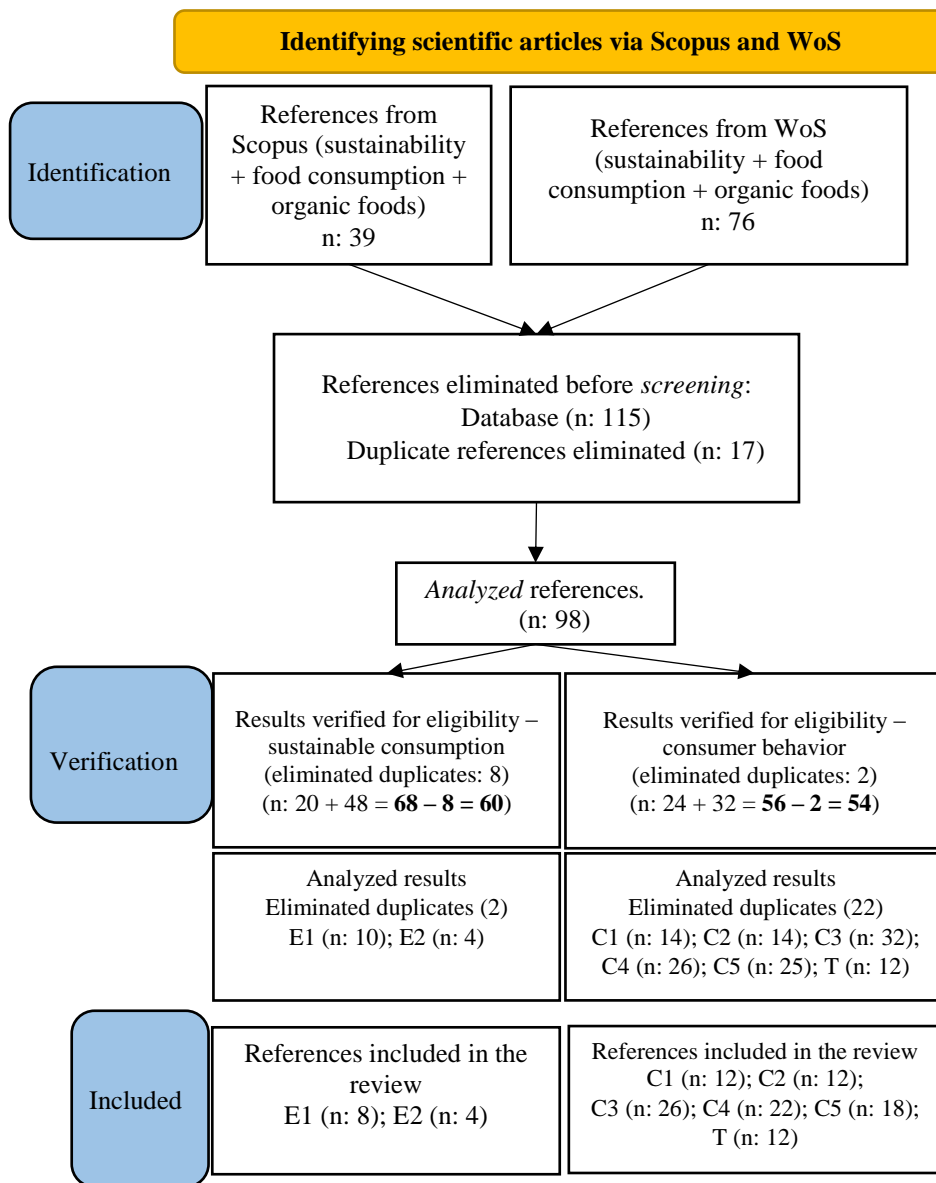
The created model was based on three stages: the identification of specialised articles published in the period 2020-2023, in English, in representative international databases, namely Scopus and Web of Science, the screening or checking of eligible items using the “sustainable consumption” filter and “consumer behaviour”, and the inclusion of articles remaining in the systematic review of literature. Using the filter terms „sustainability”, “food consumption”, “organic foods”, „ecological foods” or „bio foods”, 115 items were identified; the base for analysis was subsequently reduced to 98 articles, after the elimination of 17 duplicate articles. The articles included in the analysis appeared in various scientific journals; the top 10 papers are in table no. 1 (out of a total of 54 articles, 16 appear one time, in one journal each).

**Table no. 1. Top 10 academic journals**

<b>Journal</b>	<b>Number of articles</b>	<b>WoS</b>	<b>Scopus</b>
Sustainability	13	X	X
Foods	5	X	X
International Journal of Environmental Research and Public Health	4	X	X
Asia Pacific Journal of Marketing and Logistics	3	X	X
Journal of Business Research	3	X	X
Journal of Marketing Management	2	X	X
Food Quality and Preferences	2	X	
Cogent Business and Management	2	X	X
Cleaner and Responsible Consumption	2	X	

Journal	Number of articles	WoS	Scopus
Agronomy	2	X	X

Note: 'x' marks the existence of the journal in the selected databases (WOS – Web of Science).



Note: E1=retail; E2= marketing strategies; C1=human health; C2=safety; C3=attitudes; C4=perceptions; C5=willingness to pay; T=tendencies

Figure no. 1. The application of the PRISMA method for bibliometric study

### 3. Results and discussions

#### 3.1. Bibliometric literature analysis

In advancing our research endeavour, we explored the functionalities of the VOSviewer software. VOSviewer was used in the implementation of this approach, which generated the following co-dependencies in the selected bibliography (Table no. 2).

**Table no. 2. Co-dependences of the selected bibliography**

Bibliographical references	Citations	Link Importance
Rizzo et al., 2020	57	8
Perito et al., 2020	32	4
Kamenidou et al., 2020	32	7
Garcia et al., 2020	25	2
Nguyen et al., 2021	22	21
Fifita et al., 2020	21	2
Rempelos et al., 2021	20	1
Pulcini et al., 2020	18	0
Aldaya et al., 2021	18	2
Bumbac et al., 2020	14	2
Nova et al., 2020	14	0
Leggett, 2020	12	1
Katzeff et al., 2020	11	2
Neumayr and Moosauer, 2021	11	3
Wojciechowska-Solis et al., 2022	11	17

As shown in Table no. 2, there are links between the analysed studies centered on sustainable consumption of organic foods. Of the 115 articles found in the database, by introducing as a selection criterion the relevance of at least one citation, the results indicate the connecting validity of 35 items found in Table no. 2. Basically, in Table no. 2, the closest link is highlighted in relation to the work of Rizzo et al. (2020) analysing the health impact of organic food consumption. It is quoted 57 times with a link importance of 8. Second, a paper on generational differences in the preference of organic food (Kamenidou et al., 2020) and a case study on consumers' attitudes towards organic and local foods (Perito et al., 2020). Both papers highlight a link importance 7 and 4, respectively. As for the link strength between co-dependencies, the highest level, with 21 links, highlights a paper on the purchase intention of organic meat by Vietnamese consumers (Nguyen et al., 2021), then a comparative work on the purchasing behaviour of organic food during the COVID-19 pandemic in Poland and the United Kingdom (Wojciechowska-Solis et al., 2022) with 17 links, and a paper that comparatively analyses consumers' perception of organic food before and after the COVID-19 pandemic with 15 links (Brata et al., 2022).

The analysis of the bibliographic references cited in the selected articles was then employed. As shown in Table no. 3, it is found that the most cited paper (5 mentions, link importance 71) belonged to Bryla (2016), analysing the reasons and hindrances of sustainable food consumption. That of Reisch et al. (2013) offers an overview of sustainable food consumption (5 mentions, link importance 40); that of Aertsens et al. (2009) treats personal factors of food consumption (4 mentions, link importance 56); that of Kushwah et al. (2019) attempts to understand consumers' resistance to organic foods (4 mentions, link importance

50), and that of Hansmann et al. (2020) treats driving forces and obstacles to the increase in organic food consumption (4 mentions, link importance 44).

**Table no. 3. References cited in the selected bibliographical paper**

Cited reference	Citations	Link Importance
Bryla, 2016	5	71
Reisch et al., 2013	5	40
Aertsens et al., 2009	4	56
Kushwah et al., 2019	4	50
Hansmann et al., 2020	4	44
Azzurra et al., 2019	3	57
Rana and Paul, 2017	3	57
Thøgersen et al., 2015	3	57
Tarkiainen and Sundqvist, 2005	3	53
Nuttavuthisit and Thøgersen, 2017	3	42
Scalco et al., 2017	3	25
Aleksandrowicz et al., 2016	3	17
Garnett, 2011	3	6

As for the key concepts highlighted in the selected studies (Table no. 4), 607 terms were identified. When entering the threshold of at least 2 references to the key term, the database was limited to 191 items, although Table no. 4 presents only the keywords with at least 5 mentions. Therefore, from the result obtained, it is noted that the term with the most common occurrence is 'sustainability' (35 references and a link importance of 203), followed by 'organic products' (33 references and a link importance of 236), 'food consumption' (17 references and a link importance of 169), of 'consumer behaviour' (11 references and a link importance of 102), 'organic/ecologic farming' (10 references and a link importance of 101) and 'sustainable food consumption' (10 references and a link importance of 74).

**Table no. 4. Key concepts associated with sustainable consumption of organic food**

Keywords	Occurrence frequency	Link Importance
Sustainability	35	203
Organic/ecological/bio food	33	236
Food consumption	17	169
Consumer behaviour	11	102
Organic/ecological/bio farming	10	101
Sustainable food consumption	10	74
Human behaviour	8	144
Purchase intention	7	33
Sustainable consumption	7	27
People/clients/consumers	6	125
Consumption of organic food	6	42
Foods	6	38
Organic/ecologic/bio	6	38
Willingness to pay	6	24
Organic/ecological/bio foods	5	108



### 3.2. Types of research

The application of the ‘sustainable consumption’ filter allowed the identification of 60 scientific articles, and the ‘consumer behaviour’ filter of another 54 works. ‘Sustainable consumption’ can be supported by strategies adopted by subsequent stakeholders, retailers, various organisations responsible for consumer education and/or with the raising of awareness in favour of organic food consumption (Pocol et al., 2023; Sabău et al., 2023), but also by producers interested in generating purchase intention among consumers (Cong Doanh et al., 2021). At the same time, the analysis also aimed at delimiting the specific marketing strategies, undertaken by retailers to support the consumption of organic food. The core element of the sustainable consumption concept is represented by the sustainable consumer behaviour. To grasp the way that researchers explored this theme, we verified the research type employed: quantitative or qualitative. Thus, the studies included in the analysis are both quantitative and qualitative in nature, but the authors’ interest is higher in the quantitative ones. Interestingly, two studies based on multiple methods have been identified, including both a qualitative and a quantitative component (Table no. 5).

**Table no. 5. Research methods in the selected studies (consumer behaviour)**

Reference	Quantitative research	Qualitative research
Fernandes and Saraiva, 2022		X
Wojciechowska-Solis et al., 2022	X	
Rizzo et al., 2020	X	
Perito et al., 2020	X	
Kamenidou et al., 2020	X	
Radojević et al., 2021	X	
Giray et al., 2022	X	
Brunin et al., 2022	X	
Leggett, 2020		X
Kaur et al., 2023	X	
Ishaq et al., 2021	X	
Akter et al., 2023	X	
Baldi et al., 2021	X	
Hasan et al., 2023	X	
Kovacs and Keresztes, 2022	X	
Kristia et al., 2023	X	X
Nguyen et al., 2021	X	
Pulcini et al., 2020	X	
Brata et al., 2022	X	
Brumă et al., 2022	X	
Chekima et al., 2023	X	
Dorce et al., 2021	X	
Katzeff et al., 2020	X	X
Meyer and Simons, 2021		X
Rahman and Luomala, 2021	X	
Tulloch et al., 2021	X	
Volgger, 2022	X	
Wielicka-Regulska, 2020	X	
Yamoah et al., 2022		X

Eight of the articles focused on sustainable consumption contextualise the retail field, highlighting, for example, the role of retailers in ensuring consumers’ access to healthy organic food, but also the need to develop a mindset in favour of adopting behaviours aimed at improving and maintaining health (Wielicka-Regulska et al., 2020; De Canio et al., 2021;

Yamoah et al., 2022; Kaur et al., 2023). The literature comparatively addresses the size of the organic food market (Leggett, 2020; Neumay et al., 2021; Yamoah et al., 2022; Wojciechowska-Solis et al., 2022) and the sales volume of this type of food through grocery store chains (Kamenidou et al., 2020; Neumay et al., 2021; Wojciechowska-Solis et al., 2022). The role of marketing strategies adopted by retailers to generate consumer orientation towards sustainable, organic food (De Canio et al., 2021; Neumay et al., 2021; Cui et al., 2022) is highlighted. The principles of sustainable food consumption help to develop and/or strengthen the marketing strategy by offering healthy products that comply with ethical manufacturing principles, thus contributing to the society.

### 3.3. Characteristics of sustainable consumption of organic foods

The added value, utilitarian and hedonistic benefits, along with the socio-economic characteristics of sustainable green products are not simply appreciated by a niche of consumers, more precisely by those oriented towards the exclusive purchase of organic products, but they are also recognised by consumers of conventional products (Fernandes and Saraiva, 2022). The identified articles reveal the role of marketing strategies adopted by retailers to support sustainable consumption, paying attention to the impact that through specific neuromarketing techniques, retailers can influence to some extent the consumer behaviour (Yamoah et al., 2022), catching the attention of individuals, arousing their curiosity, and making them return to the store and/or buy certain products on an impulse. The literature also highlights the impact of strategies to promote organic food in specific markets, such as China (Leggett, 2020), but also in the development of the global organic food market. Sustainable marketing strategies also aim at the opportunity to include organic food in the basic supply of retailers, which essentially contributes to attracting consumers to stores (Kur et al., 2023). Last but not least, sustainable marketing strategies also refer to the role that marketing communication plays in supporting and presenting the sustainable food offer to different generations of consumers (Kamenidou et al., 2020), with Millennials and Gen Zers highlighting an increased inclination towards organic food (Dabija et al., 2019; Popa and Dabija, 2019). Thus, resorting to sustainable retail strategies is intended to support and even develop sustainable consumption of organic food.

Eyinade et al. (2021) identify the different attributes associated with consumer orientation towards sustainable food consumption: human health, food safety, attitudes, perceptions, and willingness to pay a higher price. Based on these characteristics, it is found that in the 54 articles included in the analysis, there is an increased research interest on the role of attitudes (27 articles) and consumer perceptions (22 articles) in supporting this type of food consumption, followed by the role of the willingness to pay a higher price for organic food (15 articles). The role of human health (13 articles) and food safety (12 articles) in supporting organic food consumption rank last. Table no. 6 contains a synthesis of the identified articles according to the five identified characteristics.

**Table no. 6. Attributes of sustainable consumption of organic foods**

References	C1 = human health	C2 = food safety	C3 = attitudes	C4 = perceptions	C5 = willingness to pay
Fernandes and Saraiva, 2022.	x				
Wojciechowska-Solis et al., 2022	x	x			
Rizzo et al., 2020	x		x	x	x
Perito et al., 2020	x	x	x	x	

References	C1 = human health	C2 = food safety	C3 = attitudes	C4 = perceptions	C5 = willingness to pay
Kamenidou et al., 2020	x	x	x	x	x
Radojević et al., 2021	x		x	x	x
Giray et al., 2022	x				
Brunin et al., 2022	x		x		
Leggett, 2020	x	x	x	x	x
Kaur et al., 2023		x	x		
Ishaq et al., 2021		x	x		
Akter et al., 2023		x			x
Baldi et al., 2021				x	x
Hasan et al., 2023		x	x	x	x
Kovacs and Keresztes, 2022		x	x		x
Kristia et al., 2023	x	x	x	x	x
Nguyen et al., 2021				x	x
Pulcini et al., 2020					x
Akter et al., 2023			x	x	
Brata et al., 2022			x	x	
Brumă et al., 2022		x	x	x	
Chekima et al., 2023			x	x	
Dorce et al., 2021	x		x		
Katzeff et al., 2020			x	x	
Meyer and Simons, 2021		x	x	x	x
Rahman and Luomala, 2021			x	x	x
Richter and Hunecke, 2020			x	x	
Sharma et al., 2021			x	x	x
Tulloch et al., 2021			x		
Volgger, 2022			x	x	
Wielicka-Regulska, 2020			x	x	
Yamoah et al., 2022	x				

### 3.4. Particularities of sustainable consumption of organic foods

The specificity of organic food gives them uniqueness, which is often associated by consumers with the support and/or improvement of human health, with a natural diet, with the protection of the environment and/or nature preservation, and with the support of future generations who will have access to the same type of resources as the current generations (Molinillo et al., 2020). Health concerns have been strongly exacerbated by the pandemic context, when the interest in the consumption and purchase of organic food has increased, some consumers stating that they can strengthen their immune system or avoid the Sars-Cov-2 virus (Śmiglak-Krajewska and Wojciechowska-Solis, 2021). Supporting organic food consumption is also due to the concern of members of contemporary society for ethical, environmental, and health issues (Schleenbecker and Hamm, 2013; Asveld et al., 2019). The modern consumer largely considers that the consumption of organic food is ethical compared to that from intensive, extensive, and conventional agriculture (Radojević et al. 2021), but also that it thus contributes to reducing the negative impact of man on nature, and to improving his health (Popa and Dabija, 2019; Pocol et al., 2021a; Radojević et al., 2021). In the purchase of organic food, consumers are guided by the term *origin* which, in their view, is often associated with local and/or regional food, and with food safety (Perito et al., 2020; Krizan et al., 2022). Sometimes, the concern for food safety has proven to be the strongest predictor of consumer purchases (Ishaq et al., 2021). Consumers' purchase intention in metropolises is strongly influenced by their concerns about food safety, their current attitude, but also by the awareness of its contribution to health care (Hasan et al., 2023).

### **3.5. The relevance of attitudes regarding sustainable consumption**

Literature analysing the topic of sustainability in relation to organic food consumption also focuses on food safety issues (Wojciechowska-Solis et al., 2022; Akter et al., 2023), human health, nature protection, etc. which it addresses in the light of consumer attitudes, perceptions, motivations, and behaviour, showing how the consumption of organic food can contribute to sustainable economic development, to social progress, and to improve the quality of life. At the same time, studies also show that once consumers are fully aware of the beneficial effects of eating organic food, they will actively seek it in store chains, and thus their purchase intention increases (Fernandes and Saraiva, 2022). Although these consumers show attitudes conducive to sustainable consumption of organic food, however, there is a significant difference in society between their attitudes and motivations, on the one hand, and the actual act of purchasing and consuming these foods, on the other hand (Vermeir et al., 2020; Brumă et al., 2022). Attitude is not always reflected in their behaviour (Katzeff et al., 2020).

Consumers who consciously seek relevant information about products obtained through maintaining balance in ecosystems have the highest level of favourable attitude, leading them to reduce the hindrances to the purchase of organic food (Akter et al., 2023). Conservative customers when buying organic food are sometimes sceptical about their authenticity, but they highlight a favourable inclination to eat organic food and understand the importance of this consumption to maintain health. The attitudes of organic food consumers often mediate the relationship between the benefits of these products and their intentions to purchase them, respectively, between the health benefits of food and their intentions to contribute to sustainable consumption (Dorce et al., 2021).

Consumers' attitudes towards eating organic food become apparent when they are future-oriented, with their perceptions of the availability of these foods leading to their consumption. However, some subjective criteria regarding consumption (purchasing power, interest in organic products, the level of awareness regarding food quality and health impact) may reduce the relevance of the availability of these organic foods (Chekima et al., 2023). It has been established that attitudes influence consumers' intentions to buy organic vegetables, followed by perceived behavioural control and subjective rules, while the perceived price moderates the relationship between the purchase intention and the actual purchase (Dorce et al., 2021). The literature (Rahman and Luomala, 2021) reveals that there are direct and indirect implications of cultural differences between consumer segments with respect to their attitudes, motivations, and actual behaviours of sustainable consumption.

To persuade consumers to buy such organic foods, respectively, to highlight a sustainable and responsible consumption in relation to human health, retailers, but also producers, should be concerned with the development of a mindset in their favour, by communicating through labels and advertising campaigns the benefits of consuming these foods for man's own development in harmony with nature. The concerns of retailers and producers should also aim to increase the interest of consumers in these foods (Popa and Dabija, 2019; Perito et al., 2020). In order to determine sustainable consumer behaviour, sector stakeholders, together with the authorities, should identify appropriate solutions to support the production and/or processing of healthy foods through public environmental, economic, and social policies, through over-taxation of unhealthy foods due to a high content of sugars, fats, etc., and to invest in mobile apps capable of providing assistance and guidance to consumers in choosing sustainable food (Brunin et al., 2022). Of course, consumer associations, along with those

supporting environmental protection, should also be more actively involved in supporting the consumption of sustainable and organic food, but also of fresh ones, which thus contribute to the improvement of human health, respectively, which constitute a viable alternative for a balanced diet (Pocol et al., 2021b; Sabău et al., 2023).

Decisions to buy organic food also depend on everyone's attitudes. They manifest themselves in a complex environment and depend on the specifics and characteristics of food, the conjuncture in which people are found, but also on intrapersonal aspects, which generate ambivalence, compromise, and disagreements. Positive attitudes towards sustainable diets are determined by personal and social norms, altruistic values, and the desire to pursue a moral behaviour in food consumption (Meyer and Simons, 2021).

As for the consumers' willingness to pay for the food's nutritional characteristics and added value, it is found that it depends to a large extent on the interest of individuals in maintaining or improving their health (Li et al., 2019), but also on the income available to support a balanced and sustainable consumption through the purchase of organic food, which is generally more expensive than conventional food, and the consumption of fresh and functional foods (Pocol et al., 2021b). In the context of sustainable consumption of organic food, price plays an important role in generating consumers' perception of their quality (Kovacs and Keresztes, 2022). While women generally pay more attention to the attributes of organic food that compete in maintaining or supporting health, men are less willing to pay a premium price for organic food (Rizzo et al., 2020). Similar to the pre-pandemic situation, consumers who consider organic food to be healthier will avoid buying the conventional counterpart, even if the organic product is more expensive than expected (Honkanen et al., 2006; Popa and Dabija, 2019). Consumer awareness of the relevance of food to maintaining and/or improving health favours accepting a higher price in normal situations, but not in pandemic times (Kamenidou et al., 2020). Social, political, economic, or health crises, as was the recent COVID-19 pandemic, promote a change in consumers' attitudes and perceptions of the purchase and consumption of organic food, these being preferred more due to their potential contribution to overall health (Muñoz-Sánchez et al., 2021).

### **3.6. Sustainable consumption of organic foods during the COVID-19 pandemic**

Following the selection of the bibliography and the elimination of duplicates and articles of low relevance, 12 other articles have been identified proposing to combine different emerging trends in the study of sustainable consumption of organic food during the pandemic of COVID-19 (Christia et al., 2023), namely: „COVID-19”, „sustainable entrepreneurship” and „qualitative research”. As sustainable consumption of organic food has grown rapidly (Fifita et al., 2020), contributing to the partial change in the perception that this market is a niche market, there is a change in global consumption trends towards a balanced and healthy diet. The COVID-19 pandemic has helped to raise awareness of issues that contribute to alleviating or improving health; consumers oriented towards the purchase of organic food are characterised by the desire for self-improvement and openness to change (Wojciechowska-Solis et al., 2022). In fact, these consumers are divided into the „potentially green”, concerned with the protection of the environment and the persevering preference for organic food, highlighting at the same time an increased sensitivity to food price changes, respectively „non-ecological” consumers who prefer food according to their acquired habits or to the traditions they know, where sustainable motives play a secondary role. In contemporary society, consumers' preference for organic products, but also for supporting sustainable consumption, becomes a certainty (Perito et al., 2020). Changing consumers' behaviour

regarding food is a great challenge due to the difficulty of changing eating habits since food is largely based on emotions, but also on personal experiences, and on cultural traditions (Kamenidou and Stavrianea, 2020).

Long-term trends lead to a real need to change some aspects regarding the consumption, structure, and manufacturing of foodstuffs due to the pressure exerted by the influence of consumer behaviour on the configuration of agriculture, processing, and even food distribution (Wielicka-Regulska, 2020). Consumer behaviour during the pandemic has undergone major changes in openness to the use of technology, better knowledge of how to collect, sort, and recognise information, purchasing food online, and increased trust in online payment tools, which today are identified as an opportunity by producers and retailers (Tunçalp and Yıldırım, 2022). Therefore, there is a real potential for market development among wider consumer segments.

From the perspective of online communication on social media networks during the COVID-19 pandemic, it is revealed that the public exhibits an increased interest in topics related to biodiversity, health, balanced eating, or agri-food systems that can bolster human health (Tulloch et al., 2021). Of course, the adoption by companies of the most appropriate strategies for approaching consumers depends largely on the availability of data on the actual consumption of organic food, but also on the socio-demographic characteristics of the target segments (Gutiérrez-Villar et al., 2022). When addressing and targeting these, issues such as the origin of organic food (local/regional or foreign), the attractive design of the packaging, the absence of additives and any harmful chemicals, price, etc. must be taken into account (Radojević et al., 2021), together with the logo of the control and certification body and the easy-to-understand eco-label highlighting the sustainability of consumption (Neumayr and Moosauer, 2021), and the name of the controlled trademark or product that complies with the quality diagrams (Gogoveţan et al., 2022). Future strategies must be based on data that indicate that consumer segments that raise concerns about environmental conservation issues are likely to formulate favourable attitudes and minimise the monetary barriers associated with the purchase of organic food (Nguyen et al., 2021).

## Conclusions

The bibliometric analysis of scientific articles, published in the pandemic period 2020-2023, focused on sustainable consumption and consumer behaviour, reflects a moderate interest of researchers, especially in the retail sector. We consider that the approaches to the strategies adopted by retailers to promote the purchase of organic food require a better use of online marketing tools for development and/or strengthening a favourable mindset for this type of consumption, raising awareness about the importance of health, food safety, generating positive attitudes and perceptions, as well as understanding the need to pay a premium price for these types of foods. Moreover, consumer behaviour is significantly different among consumers belonging to different generations and to various cultural environments. Investigating these differences would be extremely interesting and would substantiate the way retailers operate in this specific market.

Sustainable consumption of organic food has been stimulated in the context of the COVID-19 pandemic, with intense concerns in the field of European policies, but also strategic approaches to stakeholders in the sector (producers, retailers, consumer organisations) to support and develop responsible consumer behaviour towards the environment. Currently,

attention should be focused on „the gains” of the pandemic period and the transposition of these experiences in the context of the „New Normal” into a) viable strategies, able to contribute to increasing consumer interest in sustainable consumption, based in particular on green products and organic food; b) strategies to raise awareness of the role of healthy eating for the well-being of society and to increase citizens' immunity; c) increasing the role of online trade in organic food; d) raising the interest of retailers in diversifying the supply of healthy, sustainable and/or organic food; e) including the assortments of local organic food to support the regional economy; f) offering the possibility of ordering sustainable products and organic food, regardless of their degree of processing, aware of the fact that currently only those that do not require special transport conditions can be offered to customers; g) creating personalised offers of organic food as an alternative to conventional ones; h) ensuring priority access for buyers to organic food in both physical and virtual stores.

To support sustainable consumer behaviour, coherent implementations of environmental, economic, and social policies targeting subsidies or grants awarded on clear criteria for production are recommended for the processing, commercialisation, and marketing of organic food, providing financial support for the development of mobile apps that facilitate consumer orientation towards choices specific to ethical, responsible consumption.

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