

Chiripuci, Bogdan; Popescu, Maria-Floriana; Constantin, Marius

Article

The European consumers' preferences for organic food in the context of the European Green Deal

Amfiteatru Economic Journal

Provided in Cooperation with:

The Bucharest University of Economic Studies

Suggested Citation: Chiripuci, Bogdan; Popescu, Maria-Floriana; Constantin, Marius (2022) : The European consumers' preferences for organic food in the context of the European Green Deal, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 24, Iss. 60, pp. 361-378, <https://doi.org/10.24818/EA/2022/60/361>

This Version is available at:

<https://hdl.handle.net/10419/281639>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

THE EUROPEAN CONSUMERS' PREFERENCES FOR ORGANIC FOOD IN THE CONTEXT OF THE EUROPEAN GREEN DEAL

Bogdan Chiripuci^{1*}, Maria-Floriana Popescu², and Marius Constantin³
¹⁾²⁾³⁾ Bucharest University of Economic Studies, Romania

Please cite this article as:

Chiripuci, B., Popescu, M.F., and Constantin, M. 2022. The European Consumers' Preferences for Organic Food in the Context of the European Green Deal. *Amfiteatru Economic*, 24(60), pp. 361-378.

DOI: [10.24818/EA/2022/60/361](https://doi.org/10.24818/EA/2022/60/361).

Article History

Received: 30 December 2021

Revised: 12 February 2022

Accepted: 15 March 2022

Abstract

As an integral part of the United Nation's 2030 Agenda, implementing the European Green Deal is vital to ensure food security and transform food chains into a sustainable model. On the one hand, it enables the gradual abandonment of intensive agriculture and, on the other hand, it supports the responsible consumption of agri-food products and develops the consumer culture toward the appreciation of organic foods. The European Green Deal involves convergence at the member state level towards the sustainable transition of food systems to the new European model of resilience: circular, environmental, and socio-economic efficiency. The success of food chain transformation depends on many factors, including the level of development of the food system, the consumer profile, factors related to politics, and others. Based on these considerations, this research aimed to study the preferences of European consumers for organic food based on various sociodemographic variables such as age, gender, and nationality. In this regard, data on consumer preferences for organic food were extracted from the Meta platform and statistically analyzed in line with the research objective. This article provides input to the scientific literature in the field by justifying a differentiated approach to implementing the European Green Deal, depending on the consumer profile, in close connection with the variables analyzed. Their impact on shaping consumer preferences for organic food is of particular importance at the European level, which is why the implementation of the European Green Deal must be carried out in line with the specific characteristics of each Member State, with a differentiated focus on each consumer profile. The results of this empirical study confirm the need to develop strategies to raise awareness of the socioeconomic and environmental benefits of consuming organic food, especially among certain types of consumers more reluctant about their own impact on transforming the food chain to a more sustainable model by intensifying the consumption of organic food.

Keywords: organic food, consumer preferences for organic food, gender, age and nationality, European Green Deal.

JEL Classification: Q01, Q13, Z13.

* Corresponding author, **Bogdan Chiripuci** – e-mail: bogdan.chiripuci@eam.ase.ro



This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. © 2022 The Author(s).

Introduction

An increasing number of organizations are constantly conducting market research, with the aim on the one hand of analyzing the consumer profile of organic food and, on the other hand, of the impact of this category on financial markets, which is characterized by maintaining a standard of performance in an extremely harsh climate. The emergence of multiple cycles based on economic, social, and political trends is unpredictable – this pressure will always exist and will require objective decisions in the short and medium term (Jora et al., 2017). Consequently, businesses will stop using competition as an excuse not to address the most pressing issues and instead adopt a new strategy that incorporates current challenges as part of the business case for making one-off investments.

Due to the interdependence of today's social issues of today, the Sustainable Development Goals (SDGs) were developed as an alternative framework for the global community to use to guide the progress toward solving social problems. Several critical aspects must be changed to ensure the transition to more sustainable food systems (Dabija et al., 2014), including both consumer education and development, and how food is consumed; how we use and conserve natural resources; how we transform these resources into food, energy, and materials - all of which are transported, distributed, and sometimes wasted - as well as how we recycle these materials once they are no longer useful in their original form. Changes are needed at all levels of intervention, from local to regional to national, and worldwide, and cannot be accomplished by governments or the private sector alone. Many individuals and organized groups of citizens, academics, and practitioners are needed to help complete this project (Manea et al., 2021; Pătărlăgeanu et al., 2020).

One of the topics that needs attention, and will be the core of our article, will be “organic food” which through the use of sustainable agricultural techniques to produce and sell this kind of products, can be beneficial both for the environment and farmers, as well as for ensuring the safety and well-being of consumers.

Organic food is also known as an organic product. Today, there is much misinformation about the organic product that is most common in agri-food products. Basically, these are foods produced without the use of inputs, additives, or harmful chemical methods in any of the processes of obtaining the raw material and transforming it into finished products.

In recent years, the word “organic” has begun to be awarded by small, independent farms that aim to produce better products in terms of quality and market them through agricultural cooperatives. Large-scale, industrialized farms are called “farms” or “agribusinesses.” The transition of food production from a larger scale to a smaller one corresponded to the Voluntary Simplicity movement in the United States, which sought to build contemporary lifestyles that were “outwardly simple and inwardly rich,” becoming popular in the US (Elgin, 1981). However, it is easier to live if one is financially secure, as organic food, solar energy, or a fuel-efficient automobiles tend to be more expensive than other options (Drăcea et al., 2020). These can be changed with a “revolution” taking place in the consumption behavior of individuals and societies as a whole.

Organic food is bought by individuals of all ages and income levels. It has been observed that 80% of adults now buy organic food part of the time, similarly to young people (Bumbac et al., 2020). Many thought that the younger generation would not buy such food due to the cost disparities that define different lifestyles and resulted in a considerable gain in organic market share, according to Marshall (2013) and Vega-Zamora et al. (2013). According to a

Gallup Poll (Riffkin, 2014), more than half of Americans between the ages of 18 and 29 actively strive to incorporate organic foods into their diets, compared to only one-third of Americans 65 and older. It was the first time Gallup asked about organic foods in their annual consumption habits survey (Riffkin, 2014). Location can also have a well-defined role (Săseanu and Petrescu, 2011). For example, in the United States, the west consumes the most organic goods (54%), while the east consumes the least (39%), according to Riffkin (2014). The latest Gallup survey - where they asked the Americans about the use of organic food, in 2018 - showed that 47% of people strive to eat organic food regularly and 41% do not give it any thought (Brenan, 2018); moreover, there has been no movement in the organic food rankings since Gallup included them for the first time in 2014.

One of the many reasons people are becoming more interested in organic food is that it has become more widely available. Many people believe that organic food is better, safer, and more delicious than conventionally grown food products (Yiridoe, Bonti-Ankomah and Martin, 2005; Smith and Paladino, 2010; Hjelmar, 2011; Paul and Rana, 2012; Shafie and Rennie, 2012; Muhammad, Fathelrahman and Ullah, 2015). Campbell et al. (2014) found that 40% of consumers believe that organic food record a higher proportion of nutrients than conventional food, as an illustration. Several studies, such as those of Gundala and Singh (2021), Batat (2019), Hughner et al. (2007), Padel and Foster (2005), and Harper and Makatouni (2002), imply that people buy organic food because they are concerned about environmental issues (Dinu, Popîrlan and Tudor, 2020), animal welfare, and the health of their local economy. When it comes to organic food, eco-conscious customers are more likely than others to establish intentions to buy it, as do those who care about fair trade and human rights (Honkanen, Verplanken and Olsen, 2006).

Despite these findings, people generally have a favorable opinion of organic food and meat. Two notable trends develop due to the widespread good perception of organic foods. Although organic goods are widely perceived to have an independent character, consumers' views of what "organic" genuinely means vary substantially. Furthermore, even though organic food costs more than conventional food, consumers' willingness to pay for organic food varies widely (Elkington, 1997), according to genres and ages.

The aim of this study was to analyze the transformation of food chains in the European Union towards a sustainable model in relation to consumers' preferences for organic food, a topic addressed in a socio-demographic manner.

Therefore, factors such as age, gender, and nationality of consumers were considered necessary for the identification of several types of European organic food consumers. The results of this socio-demographic analysis support decision-makers and are intended to underpin strategies to raise awareness of the socio-economic and environmental benefits of consuming European organic food, especially in the context of the implementation of the European Green Deal.

1. Review of the scientific literature

Like any other new technology, organic farming needs support so that farmers can sell their products on the national markets, practicing appropriate standards for these goods. Some studies, such as those by Janssen and Hamm (2011) and Honkanen et al. (2006), suggest that the methods used to create organic food vary by country. In general, organic food is produced

using ingredients and procedures that help maintain the ecological balance of natural systems. The relationship between consumer definitions and purchase intents has not been investigated in research (Kareklas and Muehling, 2017), nor in our study, and represents a different research area to tackle in the future. However, some studies reveal that when customers display environmental understanding, they are encouraged to pursue environmentally beneficial purchasing habits (Chen and Chai, 2010; Lin and Huang, 2012; Huang et al., 2014; Tandon et al., 2020b; Orîndaru et al., 2021). Environmental knowledge is difficult to assess, and consumers are inconsistent in converting this information into their actions, according to Barber et al. (2009) and Krause (1993).

This paper will address the transformation of food chains in the European Union towards a sustainable model in relation to consumers' preferences for organic food. Before presenting the empirical results of this article, some relevant papers were summarized on practices involving the purchase of organic food and the promotion of sustainable practices, as well as the attitude and behavior of consumers toward the purchase of organic food.

1.1. Training in practices that involve the purchase of organic food

In what ways are people encouraged to buy organic food? Several studies (Krystallis and Chryssohoidis, 2005; Padel and Foster, 2005; Hughner et al., 2007; Chen, 2009; Paul and Rana, 2012; Goetzke, Nitzko and Spiller, 2014) have found that consumers with an overall holistic, healthy lifestyle (including both diet and exercise) are more interested in purchasing organic food. Others (Hughner et al., 2007; Lee and Yun, 2015; Lee, Fu and Chen, 2019; Tandon et al., 2021) believe that consumers' understanding of organic foods' nutritional content and contribution to ecological welfare, as well as the pricing aspects of organic food, impact purchases. Other scholars (Birch, Memery and De Silva Kanakaratne, 2018; Yadav, 2016; Kareklas, Carlson and Muehling, 2014) argue that the purchase decision is a mixture of egoistic purchase considerations (consumers' perceptions of the nutritional value and natural content of organic food), altruistic considerations (perceptions of organic food as less harmful to the environment), and pro-environmental lifestyles influence purchase decisions. People who are thriftier tend to buy less of these products. Frugality plays an essential role in the purchase of organic food due to the higher cost of such food compared to conventional options.

Food prices are set most efficiently when wholesalers and producers with equivalent access to necessary market information bargain over a price, according to Wilde (2013), and Clarke et al. (2002). This pricing tells customers how much it costs to provide them with the commodity in terms of resources. The willingness of consumers to pay for manufacturing expenses is also conveyed through this method. Water scarcity and poor yields in a drought year can drive up food costs, whereas abundant rain in a year could result in bumper harvests and lower prices. Food prices can fluctuate from year to year, typically affected by the weather (Reuters, 2016). Warmer temperatures can accelerate the ripening of some vegetables, resulting in scarcity and higher costs later in the growing season. Pest and fungus outbreaks can significantly increase the cost of growing crops in hotter climates. The cost of transporting food from the farm to the dinner table may also vary depending on the distance the food travels and the price of oil (Abbott et al., 2008; de Hoyos and Medvedev, 2011; Holdman, 2012; Smith, 2021). The strength and weakness of the currency market also affect the price of imported foods.

1.2. Motivation to buy organic food

According to the research literature, the willingness to pay is influenced by consumer attitudes, individual items, and places. People are prepared to spend more on vegetables and fruits than on meat, according to studies by Carpio and Isengildina-Massa (2009) and Krystallis and Chryssohoidis (2005). For example, consumers are ready to spend an average of 33% more for pesticide-free food and 28% more for 100% organic fruit, according to studies conducted by Batte et al. (2007) and Loureiro et al. (2002). On the other hand, shoppers in specialty grocery stores are ready to spend 52% more on organic and 50% more on pesticide-free food. Although women are more likely to purchase and consume organic food, men are more likely to pay a higher price for it (Padel and Foster, 2005; Hughner et al., 2007; Ureña, Bernabéu and Olmeda, 2007; Olivas and Bernabéu, 2012; Aslihan Nasir and Karakaya, 2014; Tandon et al., 2020a).

Customers' willingness to pay is a theoretically valid measure of the value that customers allocate to items that are safer than the alternatives; this was shown in studies by Merle, Chandon and Roux (2009), Netemeyer et al. (2004), and Laroche et al. (2001). Consumers' willingness to pay for green products is influenced by their views toward the environment, according to Gregory-Smith, Manika and Demirel (2017), Khan and Kirmani (2015), and Laroche et al. (2001).

Thus, awareness of environmental, ethical, and health issues sums up several factors that motivate consumers to buy organic food. There are already interactive technologies that can promote more sustainable food consumption. For example, technology can be used to trace the origins of food. Consumers may consider this important and may also be essential for organic farmers. The leading food chains are currently using digital media to communicate with their customers, for example, about special offers, recipes, and personal information. These existing communication platforms could be used in a beneficial way to communicate information on the environmental and behavioral implications of buying and consuming organic food.

2. Research methodology

Studying consumer preferences for organic foods can be done in various ways. In the case of this research article, two data sources were selected in this regard: Eurostat and Meta. The literature is rich in papers methodologically grounded on data taken over from online sources such as Facebook, Twitter, LinkedIn, and other similar social media platforms (Spence, Lachlan and Rainear, 2016; Schneider and Harknett, 2019). In order to measure the consumer interest in organic food, the following query was performed on the databases of Meta on November 2021: "*Interests → Food and drink → Food → Organic food*", according to the standard methodology described in the Facebook Audience Insight guideline by Meta (Meta Platforms, Inc., 2021). Data were segmented based on the following filters: (a) gender – women and men; and (b) age intervals – from 20 years to 65 years and older (ten age intervals in total). In order to calculate the percentage of women/men interested in organic food related subjects from the total women/men in each of the 27 EU Member States, another data set was taken over and used in this research: *population by age group, sex, and NUTS 2 region (online data code: DEMO_R_PJANGROUP)* from Eurostat (2021). Subsequently, the following descriptive statistics were calculated with respect to the percentages of women/men

interested in organic food related subjects from the total women/men at the level of each of the 27 EU Member States, using the following equations:

$$\text{Standard deviation (Std. Dev.)} = \sqrt{\frac{\sum|x-\mu|^2}{(N-1)}} \tag{1}$$

$$\text{Skewness (S)} = \frac{1}{N} \sum \left(\frac{x-\mu}{\hat{\sigma}}\right)^3 \tag{2}$$

$$\text{Kurtosis (K)} = \frac{1}{N} \sum \left(\frac{x-\mu}{\hat{\sigma}}\right)^4 \tag{3}$$

$$\text{Jarque-Bera (JB)} = \frac{N}{6} \left(S^2 + \frac{(K-3)^2}{4} \right) \tag{4}$$

In Equations 1-4, *N* represents the size of the sample, *x* represents each value from the sample, μ represents the sample's mean, and σ is an estimator for the standard deviation based on the biased variance estimator. Each equation was systematically applied to the data corresponding to each age interval (*n*=10 intervals), in the case of both genders (women and men), for each of the EU-27 Member States. In the case of a series with normal distribution, the skewness is zero, the Kurtosis is three, and the Jarque-Bera is zero (Startz, 2019). If the standard deviation is above zero, then these results show divergent consumer preference within the EU-27 with respect to the interest for organic foods, based on the age interval of the analysis. Higher standard deviations values signal divergent opinions in the case of consumers who belong to the same age interval of the analysis, based on gender and nationality. Additionally, the intensity of attraction or aversion to organic foods was characterized in this empirical research by: (a) Skewness values: if the values are negative, then the distribution has a left tail, and if the values are positive, then the distribution has a right tail; (b) Kurtosis values – if less than three, the distribution has a platikurtic character, while if the values are higher than three, then the distribution has a leptokurtic character.

The research methodology applied in this research article provides multiple layers of added value and novelty to the literature. Although there are several attempts to study consumer perspectives on food by resorting to social media platforms user data (Elghannam et al., 2020; Felicetti, Volpentesta and Ammirato, 2020; Widmar et al., 2020), there is a gap in the literature regarding consumer preferences for organic food approached in relation with their interest expressed on social media platforms in this regard. Consequently, this research paper contributes to the identified literature gap and provides valuable insight meant to support decision-makers in elaborating the best strategies and action plans regarding the agri-food systems transformation in the context of the European Green Deal.

3. Results and Discussions

The results show different consumer preferences for organic food based on age and gender. Table 1 was designed to highlight the main differences in consumer preferences for organic food in the case of women, while Table 2 was constructed with the same purpose, but the descriptive statistics were calculated in the case of men, based on the ten age intervals analyzed, from 20-24 years old to 65 and older.

Table no. 1. Descriptive statistics based on the age factor in the case of women

Indicator	Std. Dev.	Skewness	Kurtosis	Jarque-Bera
(W ₁) Age interval 20-24	5.5%	-0.6944	2.3796	2.6029
(W ₂) Age interval 25-29	7.9%	-0.4137	2.4244	1.1429
(W ₃) Age interval 30-34	9.9%	-0.7525	2.3457	3.0301
(W ₄) Age interval 35-39	12.3%	-0.1196	1.7884	1.7159
(W ₅) Age interval 40-44	11.7%	0.1312	1.9202	1.3893
(W ₆) Age interval 45-49	12.3%	0.6688	2.3441	2.4967
(W ₇) Age interval 50-54	11.8%	0.7483	2.7642	2.5821
(W ₈) Age interval 55-59	11.9%	1.0689	3.2615	5.2186
(W ₉) Age interval 60-64	10.7%	1.2335	3.6578	7.3341
(W ₁₀) Age interval 65 and above	5.2%	1.3731	3.7323	9.0875

Considering that a normal distribution exhibits zero skewness, one can notice that age groups 35-39 (-0.1196) and 40-44 (0.1312) are the ones that show the signs of a normal distribution from this perspective. However, data on EU women aged 20-39 show a slightly platykurtic distribution pattern caused by the Kurtosis values between 1.7884 and 2.3796. Moreover, in the case of these age groups, the distributions have long left tails due to the negative skewness. On the opposite side, the distributions of W₈ – W₁₀ have long right tails and are leptokurtic, considering the Kurtosis values exceeding the value of three, specific to normal distributions. These differences observed from studying the distributions of the selected indicators show that age is a factor that has a significant effect on the consumer preference for organic food. Basically, the initial results follow the direction of similar studies carried out in Europe concerning consumer preferences for organic food, signaling that the age factor plays an essential role in this regard (Moor et al., 2014; Samková et al., 2019; Aydogdu and Kaya, 2020).

Results from Table 1 show that women aged 20 to 44 years are more interested in food-related topics and are more likely to advocate for organic food than women aged 45 and older. In the context of the European Green Deal, understanding the role of the age factor is essential for decision-makers to adequately promote the Farm to Fork Strategy based on the different consumer preferences, as in the case of organic food. The upcoming food systems will have the sustainability factor at their core and will require profound changes regarding consumer behavior (Purnhagen et al., 2021), as well as involve an increase in organic farming and organic food consumption (Moschitz et al., 2021). In addition to the age factor that influences consumer preferences for organic food, as demonstrated in the case of women, the gender factor was another relevant influencing factor that was taken into account. In this regard, the same descriptive statistics were calculated in Table 2, but in the case of men, and the results showed different consumer behaviors than in the case of women.

Table no. 2. Descriptive statistics based on the age factor in the case of men

Indicator	Std. Dev.	Skewness	Kurtosis	Jarque-Bera
(M ₁) Age interval 20-24	10.6%	0.2895	1.7486	2.1389
(M ₂) Age interval 25-29	10.5%	0.1399	2.3055	0.6306
(M ₃) Age interval 30-34	7.5%	-0.1342	2.1311	0.9305
(M ₄) Age interval 35-39	7.6%	0.7357	3.4015	2.6168
(M ₅) Age interval 40-44	9.4%	1.9932	8.3888	50.5469
(M ₆) Age interval 45-49	9.3%	2.5518	10.8275	98.2306

(M ₇) Age interval 50-54	6.6%	1.7746	6.5290	28.1822
(M ₈) Age interval 55-59	5.5%	1.5075	5.0060	14.7540
(M ₉) Age interval 60-64	4.9%	1.7307	5.7397	21.9240
(M ₁₀) Age interval 65 and above	2.8%	1.9214	6.2702	28.6439

Unlike in the case of women, data regarding men preferences for organic food is slightly positively skewed when referring to younger men (20-39), except for the 30-34 age interval (slightly negatively skewed: -0.1342), while the rest of the age intervals show the signs of strongly-positive skewed distributions, especially in the case of the 45-49 age interval (2.5518). Therefore, almost all distributions are asymmetric and have long right tails. Regarding kurtosis, values below the threshold of 3 observed in the case of M₁ – M₃ demonstrate platykurtic distributions in the case of young men with their consumer preferences for organic food, while the values observed in the case of M₄ – M₁₀ show leptokurtic distributions in the case of men of 35 years of age and older with preference towards organic food. The findings show a turning point in the expression of preferences for organic food for male consumers, while for female consumers, the same turning point was identified at the age of 45. The lack of interest with age can be justified by several factors such as: agri-food and environmental education (Istudor et al., 2020; Witek and Kuźniar, 2021), purchasing habits (Nunes, Madureira and Veiga, 2021), cultural factors (Thøgersen, 2010), consumer budgetary-related factors such as consumer income and organic food price (Pătărlăgeanu et al., 2019; Radojević et al., 2021). The main differences from the gender factor are that the distributions are more: (a) profoundly peaked based on the Kurtosis values in the case of men aged 40 and above; (b) Skewness values are higher in male consumers than in female consumers in almost all cases (age ranges), justifying abnormal distributions.

The divergent results regarding the distributions of M₁ – M₁₀ indicators compared to the W₁ – W₁₀ indicators can be observed, especially if judging based on the Jarque-Bera (JB) statistical test applied to check if the series is normally distributed. Since the JB values tend to increase simultaneously with age, the results confirm the influence of this factor on consumer preferences for organic food. The JB values are generally higher in the case of men than in the case of women. Therefore, taking these descriptive statistics into account, the research results show that although age is a significant factor the in consumer preferences for organic food, another important factor is gender. Another difference from the gender factor is that the standard deviation is constantly decreasing in the case of men once age increases, while in the case of women, it is partially increasing simultaneously with age, except W₁₀. *The results confirm a trend toward indifference regarding the preference for organic food for male consumers, only as age increases among the consumers analyzed. The results also show that, in general, EU women are more interested in organic food than EU men.*

Following the findings based on the descriptive statistics analysis, Figure 1 shows that the percentage of women consumers interested in organic food from the total women consumers was the highest in the case of the 20-24 years interval (in all three cases: maximum of 80.26% in the case of France, 72.23% on average in the case of the EU-27, and 61.98% in the case of the minimum observed in Spain), and it slowly decreases as the age increases, signaling a divergent relationship between these two variables.

Furthermore, the same type of relationship was observed in the case of men, as can be observed in Figure 2. *However, the percentage of men consumers interested in organic food from the total men consumers was lower than in the case of women consumers, regardless of*

the age range. A convergence point was observed to the 20-24 age interval, as the peak of interest was observed in this age interval, at all three levels: maximum of 73.97% in Latvia, 55.78% on average in the EU-27, and 38.73% in the minimum observed in Italy.

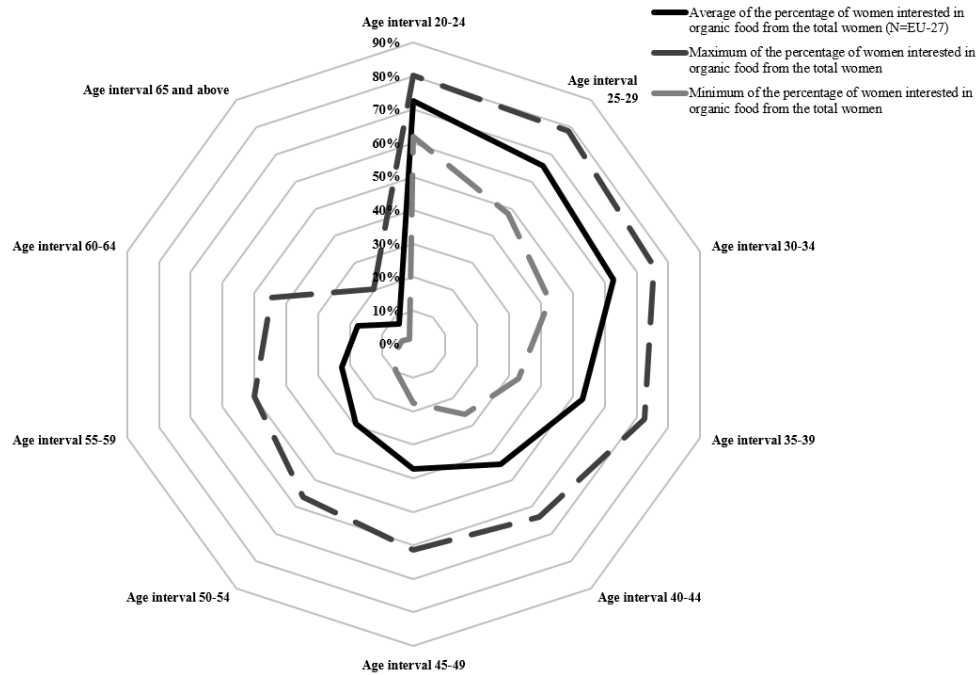


Figure no. 1. Overview on consumer preferences for organic food in the EU-27, in the case of women, based on different age groups

Regarding the preferences for organic food, our findings are convergent with the results of: (a) (Baudry et al., 2015) – who discovered that French women generally consume more organic food in their day-to-day diet than French men; (b) (Perrin et al., 2021), regarding the fact that French women tend to avoid gluten-based products and opt for a healthier dietary profile, which includes greater organic food consumption than that of French men; (Rodríguez-Bermúdez et al., 2020), regarding the typical organic food consumer profile in Northern Spain being women rather than men; (Vecchio, Van Loo and Annunziata, 2016), regarding the fact that socio-demographic variables (including gender and age) have a significant influence on Italian organic food consumers, which also have a significant impact on the willingness to pay for such products.

In the context of the European Green Deal, the agri-food systems are subject to numerous changes, and each EU Member State has to develop its national strategy on organic farming, based on a series of comprehensive studies in this regard. Additionally, each country has to elaborate a concrete list of actions, incentives, national objectives, and key performance indicators concerning the production and consumption of organic food. Ensuring the successful implementation of such a national strategy and achieving the target of 25% of agricultural area under organic farming (European Commission, 2020) resides on many

factors, including shaping consumer preferences towards sustainability, organic food consumption included. Thus, understanding different consumer behaviors is crucial.

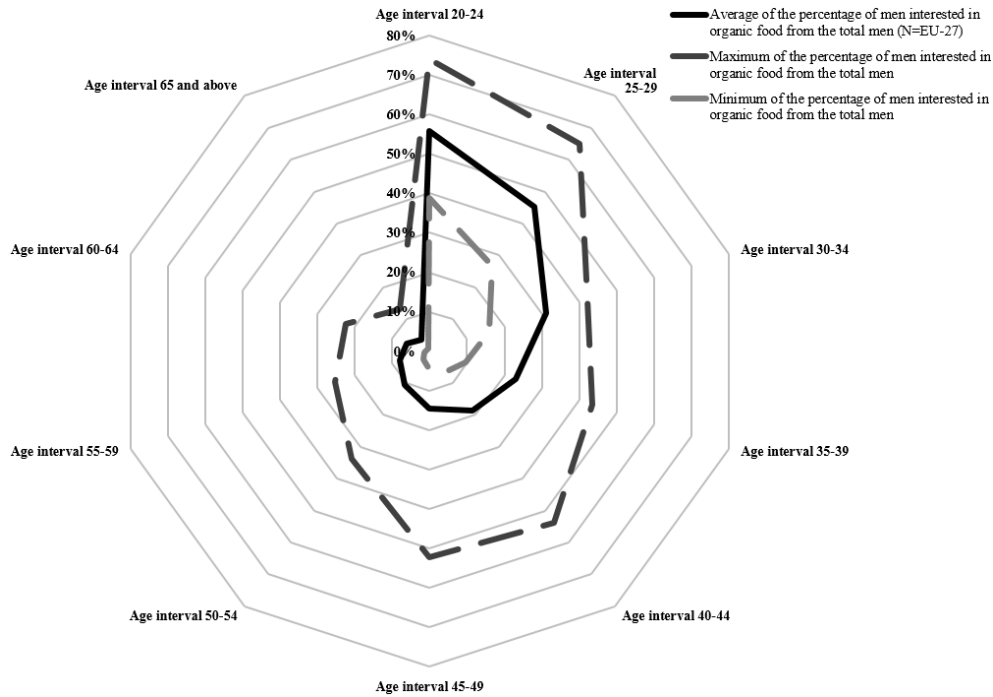


Figure no. 2. Overview on consumer preferences for organic food in the EU-27, in the case of men, based on different age groups

Empirical evidence from this study shows that young EU consumers are more interested in organic food and are, implicitly, more prone to implementing the Farm to Fork Strategy than any other consumer category. Based on the previously described ten age intervals, the decrease in consumer interest is 7.25% on average in the case of women and 5.81% in the case of men. For women, the most significant decreases in interest were observed at young ages (14.03%, referring to the 25-29 age interval reported to the 30-34 age interval), while the opposite was observed in the case of men (10.23% in the case of the 60-64 age interval reported to the 65 and above age interval).

Moreover, in terms of organic food, the goals of the European Green Deal through the two subsequent strategies, Farm to Fork and the Biodiversity Strategy, aim to increase the area under organic farming to 25% of the EU's agricultural area by 2030, reduce pesticides and up to 50% of current consumption values, respectively, reduction of chemical fertilizers and synthetic chemical fertilizers by 20% and elimination from agriculture of 10% of the surface of each farm, the role of this approach being to develop suitable areas of biodiversity development, including abandoned land (European Commission, 2020).

An interesting point of view is identified in the assessment of the US Department of Agriculture, which claims that achieving the goals of the two strategies within the European Union will lead by 2030 to reducing productivity and agricultural production by up to 12%

in Europe, which indicates a reduction in food production, thus leading to 17% price increases, an approach that will directly affect the consumer. Also, food exports within the European Union will be reduced by 20%, affecting farmers' incomes, which will be reduced by approx. 16% on average, while the value of GDP at the Community level will decrease by €76 billion per year.

Therefore, policy makers must design comprehensive strategies with different actions for each organic food consumer category to be able to use the descriptions of this study.

Conclusions

Sustainable food consumption has great potential for environmental conservation. Sustainable practices are a visible but modest incentive for huge investments in organic food production by agri-food entrepreneurs. Incentive programs aimed at minimizing the negative impact of food production and consumption on the environment will reduce the desire to consume or produce in an environmentally harmful manner.

Ecologically sound consumption requires an increase in the variety of foods available. The system of local ecological knowledge will be considered as part of this. The so-called "political involvement" requires new policies and political will to encourage more environmentally friendly food consumption and associated sustainability trends, such as the consumption of organic food.

The participation and commitment of consumers and all interested stakeholders are essential for the success of the European Green Deal. Recent political events show that they bring with them a paradigm shift that only works if citizens are fully involved in their design, so they are and should remain a driving force in the transition to a sustainable development model.

At the same time, the assessment of the implementation of environmental policies in agriculture will play a key role in mapping the situation in each European country, across all sociodemographic categories, to ensure food security and safety and to transform food chains into this new sustainable model of production and consumption. Therefore, this paper can be a coherent example of the current level of awareness among the European population about the interest and consumption of organic products and is an important starting point for future research studies.

Practically, the changes related to the European Green Deal will lead to a revolution in the preferences of the consumer of organic food, at the same time as his education to consume responsibly both goods and especially agri-food products. This aspect has already been proven in the literature, where numerous studies show a tendency for consumers to purchase organic and local products, to respect the environment, quality, and safety of food production.

In this respect, according to the results obtained in the paper, it is observed that the trend of European consumers interested in organic food has a majority share among young people, which shows both their high degree of change to be implemented in the European Union, as well as the recognition of the quality of organic products, an aspect that is closely related to the component of sustainable development, which involves educating a responsible and sustainable consumer.

Regarding the limits of this research, the preferences of European consumers for organic food were studied based on the digital interaction of consumers with a large number of Meta web

pages dedicated to the topic of organic food: either companies that sell such products or non-profit organizations that promote the consumption of organic food in the context of sustainability, or public institutions that deal with the dissemination of content on organic food – all these Web pages have been cataloged by Meta as being dedicated exclusively to the topic of organic food. For this reason, the results of the research in this study are based on the classification of Web pages already made by Meta, on which the authors could not intervene. However, future research directions aim to broaden the scope of interest to other platforms that can provide similar data on the European consumers' preferences for organic food: Google Trends, Twitter, TikTok Audience Insights, and others.

References

- Abbott, P.C., Hurt, C., Tyner, W.E., Abbott, P.C., Hurt, C. and Tyner, W.E., 2008. What's Driving Food Prices? [online] <https://doi.org/10.22004/AG.ECON.37951>
- Aslihan Nasir, V. and Karakaya, F., 2014. Consumer segments in organic foods market. *Journal of Consumer Marketing*, [online] 31(4), pp.263-277. <https://doi.org/10.1108/JCM-01-2014-0845>
- Aydogdu, M.H. and Kaya, F., 2020. Factors Affecting Consumers' Consumption of Organic Foods: A Case Study in GAP-Şanlıurfa in Turkey. *Journal of Agricultural Science and Technology*, 22(2), pp.347-359. <http://jast.modares.ac.ir/article-23-13340-en.html>
- Barber, N., Taylor, C. and Strick, S., 2009. Wine consumers' environmental knowledge and attitudes: Influence on willingness to purchase. *International Journal of Wine Research*, 1(1), pp.59-72.
- Batat, W. ed., 2019. *Food and experiential marketing: pleasure, wellbeing and consumption*. 1 Edition ed. Routledge interpretive marketing research. New York: Routledge.
- Batte, M.T., Hooker, N.H., Haab, T.C. and Beaverson, J., 2007. Putting their money where their mouths are: Consumer willingness to pay for multi-ingredient, processed organic food products. *Food Policy*, [online] 32(2), pp.145-159. <https://doi.org/10.1016/j.foodpol.2006.05.003>
- Baudry, J., Méjean, C., Allès, B., Péneau, S., Touvier, M., Hercberg, S., Lairon, D., Galan, P. and Kesse-Guyot, E., 2015. Contribution of Organic Food to the Diet in a Large Sample of French Adults (the NutriNet-Santé Cohort Study). *Nutrients*, 7(10), pp.8615-8632. <https://doi.org/10.3390/nu7105417>
- Birch, D., Memery, J. and De Silva Kanakarathne, M., 2018. The mindful consumer: Balancing egoistic and altruistic motivations to purchase local food. *Journal of Retailing and Consumer Services*, [online] 40, pp.221-228. <https://doi.org/10.1016/j.jretconser.2017.10.013>
- Brenan, M., 2018. *Most Americans Try to Eat Locally Grown Foods*. [online] Gallup.com. Available at: <<https://news.gallup.com/poll/240515/americans-try-eat-locally-grown-foods.aspx>> [Accessed 29 December 2021].
- Bumbac, R., Bobe, M., Procopie, R., Pamfilie, R., Giuşcă, S. and Enache, C., 2020. How Zoomers' Eating Habits Should be Considered in Shaping the Food System for 2030 – A Case Study on the Young Generation from Romania. *Sustainability*, [online] 12(18), article no. 7390. <https://doi.org/10.3390/su12187390>

- Campbell, B.L., Khachatryan, H., Behe, B.K., Dennis, J. and Hall, C., 2014. US and Canadian consumer perception of local and organic terminology. *International Food and Agribusiness Management Review*, 17, pp.21-40. <https://ageconsearch.umn.edu/record/167903>
- Carpio, C.E. and Isengildina-Massa, O., 2009. Consumer willingness to pay for locally grown products: the case of South Carolina. *Agribusiness*, [online] 25(3), pp.412-426. <https://doi.org/10.1002/agr.20210>
- Chen, M., 2009. Attitude toward organic foods among Taiwanese as related to health consciousness, environmental attitudes, and the mediating effects of a healthy lifestyle. *British Food Journal*, [online] 111(2), pp.165-178. <https://doi.org/10.1108/00070700910931986>
- Chen, T.B. and Chai, L.T., 2010. Attitude towards the environment and green products: Consumers' perspective. *Management science and engineering*, 4(2), pp.27-39. <http://dx.doi.org/10.3968/j.mse.1913035X20100402.002>
- Clarke, R., Davies, S., Dobson, P. and Waterson, M. eds., 2002. *Buyer power and competition in European food retailing*. Cheltenham, UK ; Northampton, Mass: Edward Elgar Pub.
- Dabija, D.-C., Dinu, V., Abrudan, I.N. and Postelnicu, C., 2014. The Impact of the Marketing Mix and Sustainability on Shaping Consumer Preferences Towards Non-Food Stores. *Transformations in Business & Economics*, [online] 13(3/33), pp.36-53. Available at: <<https://ssrn.com/abstract=2580072>>.
- Dinu, C., Popîrlan, C. and Tudor, I.V., 2020. Statistical Analysis of Air Pollution and Life Expectancy in Eastern Europe. *Journal of Environmental Management and Tourism*, [online] 11(3), pp.763-772. [https://doi.org/10.14505//jemt.v11.3\(43\).30](https://doi.org/10.14505//jemt.v11.3(43).30)
- Drăcea, R.M., Ignat, R., Trică, C.L., Teodor, C., Ciobanu, L. and Nedelcu, A.C., 2020. Energy Efficiency of E.U. Member States: A Panel Data Analysis. *Economic Computation and Economic Cybernetics Studies and Research*, [online] 54(4), pp.153-171. <https://doi.org/10.24818/18423264/54.4.20.10>
- Elghannam, A., Mesias, F.J., Escribano, M., Fouad, L., Horrillo, A. and Escribano, A.J., 2020. Consumers' Perspectives on Alternative Short Food Supply Chains Based on Social Media: A Focus Group Study in Spain. *Foods*, 9(1), p.22. <https://doi.org/10.3390/foods9010022>
- Elgin, D., 1981. *Voluntary Simplicity: Towards a Way of Life that is Inwardly Simple, Outwardly Rich*. Quill (William Morrow).
- Elkington, J., 1997. *Cannibals with forks: the triple bottom line of 21st century business*. Oxford: Capstone.
- European Commission, 2020. *Farm to Fork Strategy. For a fair, healthy and environmentally-friendly food system*.
- Eurostat, 2021. Population by age group, sex and NUTS 2 region. Available at: <https://ec.europa.eu/eurostat/databrowser/view/DEMO_R_PJANGROUP__custom_1812546/default/table?lang=en> [Accessed 1 November 2021].
- Felicetti, A.M., Volpentesta, A.P. and Ammirato, S., 2020. Analyzing app-based food information services: the case of Olive Oil sector. *VINE Journal of Information and Knowledge Management Systems*, 50(3), pp.427-453. <https://doi.org/10.1108/VJIKMS-05-2019-0062>

- Goetzke, B., Nitzko, S. and Spiller, A., 2014. Consumption of organic and functional food. A matter of well-being and health? *Appetite*, [online] 77, pp.96-105. <https://doi.org/10.1016/j.appet.2014.02.012>
- Gregory-Smith, D., Manika, D. and Demirel, P., 2017. Green intentions under the blue flag: Exploring differences in EU consumers' willingness to pay more for environmentally-friendly products. *Business Ethics: A European Review*, [online] 26(3), pp.205-222. <https://doi.org/10.1111/beer.12151>
- Gundala, R.R. and Singh, A., 2021. What motivates consumers to buy organic foods? Results of an empirical study in the United States. *PLOS ONE*, [online] 16(9), article no. e0257288. <https://doi.org/10.1371/journal.pone.0257288>
- Harper, G.C. and Makatouni, A., 2002. Consumer perception of organic food production and farm animal welfare, *British Food Journal*, Vol. 104 No. 3/4/5, pp.287-299. <https://doi.org/10.1108/00070700210425723>
- Hjelmar, U., 2011. Consumers' purchase of organic food products. A matter of convenience and reflexive practices. *Appetite*, 56(2), pp.336-344. <https://doi.org/10.1016/j.appet.2010.12.019>
- Holdman, J., 2012. What determines food prices? *Bismarck Tribune*. [online] Available at: <https://bismarcktribune.com/business/local/what-determines-food-prices/article_1348dbe8-cd2f-11e1-b02b-0019bb2963f4.html> [Accessed 29 December 2021].
- Honkanen, P., Verplanken, B. and Olsen, S.O., 2006. Ethical values and motives driving organic food choice. *Journal of Consumer Behaviour: An International Research Review*, 5(5), pp.420-430. <https://doi.org/10.1002/cb.190>
- de Hoyos, R.E. and Medvedev, D., 2011. Poverty Effects of Higher Food Prices: A Global Perspective. *Review of Development Economics*, [online] 15(3), pp.387-402. <https://doi.org/10.1111/j.1467-9361.2011.00615.x>
- Huang, H.-C., Lin, T.-H., Lai, M.-C. and Lin, T.-L., 2014. Environmental consciousness and green customer behavior: An examination of motivation crowding effect. *International Journal of Hospitality Management*, 40, pp.139-149. <https://doi.org/10.1016/j.ijhm.2014.04.006>
- Hughner, R.S., McDonagh, P., Prothero, A., Shultz, C.J. and Stanton, J., 2007. Who are organic food consumers? A compilation and review of why people purchase organic food. *Journal of Consumer Behaviour: An International Research Review*, 6(2-3), pp.94-110. <https://doi.org/10.1002/cb.210>
- Istudor, N., Dinu, V., Gogu, E., Prada, E.-M. and Petrescu, I.-E., 2020. Impact of Education and Economic Growth on Labour Migration in the European Union. A Panel Data Analysis. *E&M Economics and Management*, [online] 23(4), pp.55-67. <https://doi.org/10.15240/tul/001/2020-4-004>
- Janssen, M. and Hamm, U., 2011. Consumer perception of different organic certification schemes in five European countries. *Organic Agriculture*, 1(1), pp.31-43. <https://doi.org/10.1007/s13165-010-0003-y>
- Jora, O.-D., Hurduzeu, G., Iacob, M., Cretan, G.-C. and Hurduzeu, R.-E., 2017. 'Dialectical Contradictions' in the Neoclassical Theory and Policy Regarding Market Competition: The Consumer and His Continuous Burden of Crisis. *Amfiteatru Economic*, [online] 19(45), pp.544-565.

- Kareklas, I., Carlson, J.R. and Muehling, D.D., 2014. "I Eat Organic for My Benefit and Yours": Egoistic and Altruistic Considerations for Purchasing Organic Food and Their Implications for Advertising Strategists. *Journal of Advertising*, [online] 43(1), pp.18-32. <https://doi.org/10.1080/00913367.2013.799450>
- Kareklas, I. and Muehling, D.D. eds., 2017. *Deciphering organic foods: a comprehensive guide to organic food production, consumption, and promotion*. Green research, developments, and programs. New York: Nova Publishers.
- Khan, M.N. and Kirmani, M.D., 2015. Influence of environmental characteristics of the consumers on their willingness to pay for green products: an empirical investigation. *International Journal of Social Entrepreneurship and Innovation*, [online] 3(5), p.374. <https://doi.org/10.1504/IJSEI.2015.072532>
- Krause, D., 1993. Environmental consciousness: An empirical study. *Environment and Behavior*, 25(1), pp.126-142.
- Krystallis, A. and Chrysosoidis, G., 2005. Consumers' willingness to pay for organic food: Factors that affect it and variation per organic product type. *British Food Journal*, [online] 107(5), pp.320-343. <https://doi.org/10.1108/00070700510596901>
- Laroche, M., Bergeron, J. and Barbaro-Forleo, G., 2001. Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, [online] 18(6), pp.503-520. <https://doi.org/10.1108/EUM00000000006155>
- Lee, H.-J. and Yun, Z.-S., 2015. Consumers' perceptions of organic food attributes and cognitive and affective attitudes as determinants of their purchase intentions toward organic food. *Food Quality and Preference*, [online] 39, pp.259-267. <https://doi.org/10.1016/j.foodqual.2014.06.002>
- Lee, T.H., Fu, C.-J. and Chen, Y.Y., 2019. Trust factors for organic foods: consumer buying behavior. *British Food Journal*, [online] 122(2), pp.414-431. <https://doi.org/10.1108/BFJ-03-2019-0195>
- Lin, P.-C. and Huang, Y.-H., 2012. The influence factors on choice behavior regarding green products based on the theory of consumption values. *Journal of Cleaner production*, 22(1), pp.11-18. <https://doi.org/10.1016/j.jclepro.2011.10.002>
- Loureiro, M.L., McCluskey, J.J. and Mittelhammer, R.C., 2002. Will Consumers Pay a Premium for Eco-labeled Apples? *Journal of Consumer Affairs*, [online] 36(2), pp.203-219. <https://doi.org/10.1111/j.1745-6606.2002.tb00430.x>
- Manea, D.-I., Istudor, N., Dinu, V. and Paraschiv, D.-M., 2021. Circular Economy and Innovative Entrepreneurship, Prerequisites for Social Progress. *Journal of Business Economics and Management*, [online] 22(5), pp.1342-1359. <https://doi.org/10.3846/jbem.2021.15547>
- Marshal, L., 2013. Organic continues double-digit gains. *New Hope Network*. [online] Available at: <<https://www.newhope.com/nfm-market-overview/organic-continues-double-digit-gains>> [Accessed 28 December 2021].
- Merle, A., Chandon, J.-L. and Roux, E., 2009. Why Consumers Are Willing to Pay for Mass Customized Products: Dissociating Product and Experiential Value. In: *Handbook of Research in Mass Customization and Personalization*. [online] World Scientific Publishing Company. pp.208-225. https://doi.org/10.1142/9789814280280_0011
- Meta Platforms, Inc., 2021. *Facebook Audience Insight Database*.

- Moor, U., Moor, A., Pöldma, P. and Heinmaa, L., 2014. Consumer preferences of apples in Estonia and changes in attitudes over five years. *Agricultural and Food Science*, 23(2), pp.135-145. <https://doi.org/10.23986/afsci.40936>
- Moschitz, H., Muller, A., Kretzschmar, U., Haller, L., de Porrás, M., Pfeifer, C., Oehen, B., Willer, H. and Stolz, H., 2021. How can the EU Farm to Fork strategy deliver on its organic promises? Some critical reflections. *EuroChoices*, 20(1), pp.30-36. <https://doi.org/10.1111/1746-692X.12294>
- Muhammad, S., Fathelrahman, E. and Ullah, R.U.T., 2015. Factors Affecting Consumers' Willingness to Pay for Certified Organic Food Products in United Arab Emirates. *Journal of Food Distribution Research*, 46(1). <http://doi.org/10.22004/ag.econ.199045>
- Netemeyer, R.G., Krishnan, B., Pullig, C., Wang, G., Yagci, M., Dean, D., Ricks, J. and Wirth, F., 2004. Developing and validating measures of facets of customer-based brand equity. *Journal of Business Research*, [online] 57(2), pp.209-224. [https://doi.org/10.1016/S0148-2963\(01\)00303-4](https://doi.org/10.1016/S0148-2963(01)00303-4)
- Nunes, F., Madureira, T. and Veiga, J., 2021. The Organic Food Choice Pattern: Are Organic Consumers Becoming More Alike? *Foods*, 10(5), article no. 983. <https://doi.org/10.3390/foods10050983>
- Olivas, R. and Bernabéu, R., 2012. Men's and women's attitudes toward organic food consumption. A Spanish case study. *Spanish Journal of Agricultural Research*, [online] 10(2), article no. 281. <https://doi.org/10.5424/sjar/2012102-507-11>
- Orîndaru, A., Popescu, M.-F., Căescu, Ștefan-C., Botezatu, F., Florescu, M.S. and Runceanu-Albu, C.-C., 2021. Leveraging COVID-19 Outbreak for Shaping a More Sustainable Consumer Behavior. *Sustainability*, [online] 13(11), article no. 5762. <https://doi.org/10.3390/su13115762>
- Padel, S. and Foster, C., 2005. Exploring the gap between attitudes and behaviour: Understanding why consumers buy or do not buy organic food. *British Food Journal*, [online] 107(8), pp.606-625. <https://doi.org/10.1108/00070700510611002>
- Pătărlăgeanu, S.R., Negrei, C., Dinu, M. and Chiocar, R., 2020. Reducing the Carbon Footprint of the Bucharest University of Economic Studies through Green Facades in an Economically Efficient Manner. *Sustainability*, [online] 12(9), article no. 3779. <https://doi.org/10.3390/su12093779>
- Pătărlăgeanu, S.R., Păcurari, M.N., Stanciu, P. and Petrariu, R., 2019. The Marketing of Agricultural Products in Romania and the European Union. *Quality - Access to Success*, 20, pp.451-455.
- Paul, J. and Rana, J., 2012. Consumer behavior and purchase intention for organic food. *Journal of Consumer Marketing*, [online] 29(6), pp.412-422. <https://doi.org/10.1108/07363761211259223>
- Perrin, L., Allès, B., Julia, C., Hercberg, S., Touvier, M., Lairon, D., Baudry, J. and Kesse-Guyot, E., 2021. Organic food consumption and gluten-free diet, is there a link? Results in French adults without coeliac disease. *The British Journal of Nutrition*, 125(9), pp.1067-1078. <https://doi.org/10.1017/S0007114520003323>
- Purnhagen, K.P., Clemens, S., Eriksson, D., Fresco, L.O., Tosun, J., Qaim, M., Visser, R.G.F., Weber, A.P.M., Wesseler, J.H.H. and Zilberman, D., 2021. Europe's Farm to Fork Strategy and Its Commitment to Biotechnology and Organic Farming: Conflicting

- or Complementary Goals? *Trends in Plant Science*, 26(6), pp.600-606. <https://doi.org/10.1016/j.tplants.2021.03.012>
- Radojević, V., Tomaš Simin, M., Glavaš Trbić, D. and Milić, D., 2021. A Profile of Organic Food Consumers – Serbia Case-Study. *Sustainability*, 13(1), article no. 131. <https://doi.org/10.3390/su13010131>
- Reuters, 2016. Canadian farmers return to growing vegetables, fruits as low loonie lifts prices. *Financial Post*. [online] Available at: <<https://financialpost.com/commodities/agriculture/canadian-farmers-return-to-growing-vegetables-fruits-as-low-loonie-lifts-prices>> [Accessed 29 December 2021].
- Riffkin, R., 2014. Forty-Five Percent of Americans Seek Out Organic Foods. *Gallup.com*. [online] Available at: <<https://news.gallup.com/poll/174524/forty-five-percent-americans-seek-organic-foods.aspx>> [Accessed 28 December 2021].
- Rodríguez-Bermúdez, R., Miranda, M., Orjales, I., Ginzo-Villamayor, M.J., Al-Soufi, W. and López-Alonso, M., 2020. Consumers' perception of and attitudes towards organic food in Galicia (Northern Spain). *International Journal of Consumer Studies*, 44(3), pp.206-219. <https://doi.org/10.1111/ijcs.12557>
- Samková, E., Hasoňová, L., Kadlec, J., Smetana, P. and Kala, R., 2019. Young consumer preferences of basic food products depending on age and gender. *Journal of Central European Agriculture*, 20(2), pp.741-747. <https://doi.org/10.5513/JCEA01/20.2.2162>
- Săseanu, A.S. and Petrescu, R.M., 2011. Potential connections between migration and immigrants' food consumption habits. The case of Romanian immigrants in Andalusia, Spain. *Amfiteatru Economic*, [online] 13(5), pp.790-802.
- Schneider, D. and Harknett, K., 2019. What's to Like? Facebook as a Tool for Survey Data Collection. *Sociological Methods & Research*. <https://doi.org/10.1177/0049124119882477>
- Shafie, F.A. and Rennie, D., 2012. Consumer Perceptions Towards Organic Food. *Procedia – Social and Behavioral Sciences*, [online] 49, pp.360-367. <https://doi.org/10.1016/j.sbspro.2012.07.034>.
- Smith, A., 2021. Why global food prices are higher today than for most of modern history. *The Conversation*. [online] Available at: <<http://theconversation.com/why-global-food-prices-are-higher-today-than-for-most-of-modern-history-168210>> [Accessed 29 December 2021].
- Smith, S. and Paladino, A., 2010. Eating clean and green? Investigating consumer motivations towards the purchase of organic food. *Australasian Marketing Journal*, 18(2), pp.93-104.
- Spence, P.R., Lachlan, K.A. and Rinear, A.M., 2016. Social media and crisis research: Data collection and directions. *Computers in Human Behavior*, 54, pp.667-672. <https://doi.org/10.1016/j.chb.2015.08.045>
- Startz, R., 2019. *EViews Illustrated*. University of California: Santa Barbara, CA, USA.
- Tandon, A., Dhir, A., Kaur, P., Kushwah, S. and Salo, J., 2020a. Behavioral reasoning perspectives on organic food purchase. *Appetite*, [online] 154, article no. 104786. <https://doi.org/10.1016/j.appet.2020.104786>
- Tandon, A., Dhir, A., Kaur, P., Kushwah, S. and Salo, J., 2020b. Why do people buy organic food? The moderating role of environmental concerns and trust. *Journal of Retailing and*

- Consumer Services*, 57, article no. 102247. <https://doi.org/10.1016/j.jretconser.2020.102247>
- Tandon, A., Jabeen, F., Talwar, S., Sakashita, M. and Dhir, A., 2021. Facilitators and inhibitors of organic food buying behavior. *Food Quality and Preference*, [online] 88, article no. 104077. <https://doi.org/10.1016/j.foodqual.2020.104077>
- Thøgersen, J., 2010. Country Differences in Sustainable Consumption: The Case of Organic Food. *Journal of Macromarketing*, 30(2), pp.171-185. <https://doi.org/10.1177/0276146710361926>
- Ureña, F., Bernabéu, R. and Olmeda, M., 2007. Women, men and organic food: differences in their attitudes and willingness to pay. A Spanish case study. *International Journal of Consumer Studies*, [online] 32(1), pp.18-26. <https://doi.org/10.1111/j.1470-6431.2007.00637.x>
- Vecchio, R., Van Loo, E.J. and Annunziata, A., 2016. Consumers' willingness to pay for conventional, organic and functional yogurt: evidence from experimental auctions. *International Journal of Consumer Studies*, 40(3), pp.368-378. <https://doi.org/10.1111/ijcs.12264>
- Vega-Zamora, M., Parras-Rosa, M., Murgado-Armenteros, E. and Torres-Ruiz Francisco, J., 2013. The Influence of the Term 'Organic' on Organic Food Purchasing Behavior. *Procedia - Social and Behavioral Sciences*, [online] 81, pp.660-671. <https://doi.org/10.1016/j.sbspro.2013.06.493>
- Widmar, N., Bir, C., Wolf, C., Lai, J. and Liu, Y., 2020. #Eggs: social and online media-derived perceptions of egg-laying hen housing. *Poultry Science*, 99(11), pp.5697-5706. <https://doi.org/10.1016/j.psj.2020.07.011>
- Wilde, P., 2013. *Food Policy in the United States*. [online] Routledge. <https://doi.org/10.4324/9780203121795>
- Witek, L. and Kuźniar, W., 2021. Green Purchase Behavior: The Effectiveness of Sociodemographic Variables for Explaining Green Purchases in Emerging Market. *Sustainability*, 13(1), article no. 209. <https://doi.org/10.3390/su13010209>
- Yadav, R., 2016. Altruistic or egoistic: Which value promotes organic food consumption among young consumers? A study in the context of a developing nation. *Journal of Retailing and Consumer Services*, [online] 33, pp.92-97. <https://doi.org/10.1016/j.jretconser.2016.08.008>
- Yiridoe, E.K., Bonti-Ankomah, S. and Martin, R.C., 2005. Comparison of consumer perceptions and preference toward organic versus conventionally produced foods: A review and update of the literature. *Renewable agriculture and food systems*, 20(4), pp.193-205. <https://doi.org/10.1079/RAF2005113>