

Article

Comparative Study about the Consumption of Organic Food Products on Samples of Portuguese and Turkish Consumers under the COVID-19 Pandemic Context

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Abstract: This research aimed to study consumers' trends and the consumption of foods obtained through organic farming in two different countries, Portugal and Turkey. A questionnaire survey was used, applied through internet tools as a result of COVID-19 pandemic restrictions. For the treatment of data, we used basic statistics complemented with a tree classification, aimed at evaluating the influence of sociodemographic factors on the knowledge about this type of food. The results showed that the consumption patterns are relatively similar in both countries, with many participants consuming organic foods, especially vegetables and fruits, consuming them mostly two or three meals per week. The strongest motivations to consume organic foods include benefits for human health and lower environmental impacts, while the most substantial reason not to consume is the higher price. It was also found that in both countries, people have good knowledge about the advantages of organic foods over conventional ones. Finally, the perception of the value attributed by society to organic foods was considerably higher in Portugal. These results confirm the apparent trend of making more sustainable food choices, which is motivated by the perceived negative impact of conventional agriculture on ecosystems and health.

Keywords: sustainable agriculture; organic farming; food consumption; questionnaire survey; COVID-19

1. Introduction

The growing human population requires increased food production. Therefore, sustainable techniques must be found, and biodiversity risks must be minimised [1]. Organic farming (OF) systems are one of the forms of planting that have been suggested to replace the conventional forms and appear to support higher levels of biodiversity than conventional ones [2,3]. According to IFOAM—Organics International (Bonn Germany), OF is a system that promotes the health of soils, ecosystems, and people. Rather than using harmful inputs, it relies on biological processes, biodiversity, and cycles adapted to local conditions [4].

This particular farming mode can generate products that can be inserted into different types of labelling. Food labelled as organic, it has been stated, “does not indicate anything

directly about the product, only about the production method.” [5]. According to the European Union, in agreement with the United States Department of Agriculture, organic products’ labels are divided into four groups depending on the origin of their ingredients, as follows:

- 100% organic: No synthetic ingredients are allowed by law. These products carry the USDA Organic seal.
- Organic: At least 95% of ingredients are produced in organic mode. These products carry the USDA Organic seal.
- Made with organic ingredients: At least 70% of ingredients are organic, and the remaining 30% are from a list approved by the USDA. The mention “Made with organic ingredients” may appear on the packaging, but not the USDA Organic seal.
- Natural or All Natural: these mentions do not mean organic.

These labels also apply to meat and poultry products, which may not contain any artificial flavouring, colours, chemical preservatives, or synthetic ingredients. These food items must only be minimally processed (e.g., roasted, or frozen). If there is a physical process, it is simply a separation operation (e.g., grinding, separating eggs, and juicing fruit), and separation by chemicals or other unnatural means is not allowed.

OF can be characterised as a methodology that emphasises crop rotation, natural pest management, crop and livestock diversification, and soil improvement through compost additions and animal and green manure [6]. Modern machinery, improved crop types, soil and water conservation methods, and the newest advancements in livestock nutrition and handling are all used by organic farmers [7]. OF methods range from tight closed-cycle systems that go above and beyond organic certification requirements by limiting external inputs, to more typical systems that simply follow organic certification requirements [8]. Organic agriculture differs from conventional agriculture in several ways. When it comes to conventional farming, synthetic chemicals are used to accelerate the growth of the crop [9]. On the other hand, organic agriculture uses organic wastes and compost as fertilisers, resulting in an increase in the nutrients supplied by plants. Pesticides and insecticides are used in the conventional farming system to eradicate pests and weeds. Farmers that work in an organic system, on the other hand, prefer to use birds and some insects to eat the harmful insects [10].

Considering its characteristics, organic agriculture has advantages, but it can also present disadvantages. One of the main advantages of growing organic food is that farmers may reduce the quantity of greenhouse gases released into the atmosphere, such as methane and nitrous oxide [9]. Many farmers use synthetic fertilisers, which need a lot of fossil fuels during the manufacturing process, therefore, using less synthetic fertiliser implies burning fewer fossil fuels. Chemical fertilisers are harmful to the environment, as they can invade local ecosystems, injure animals, and pollute rivers. OF does not pose the same dangers to the environment [10]. Concerning weeds, conventional farming methods rely on the usage of herbicides. On the other hand, crop rotation is used in OF to avoid plant damage by a specific weed. Furthermore, organic farmers would prefer to go in and manually pick weeds to control weed development [11]. One of the most significant disadvantages of organic farming is the high expense of the techniques used. Because no pesticides are used, the crops grown are significantly more susceptible to pests and disease. Organic farming can be more labour-intensive, and organic feed is far more expensive than non-organic feed [12]. These costs are passed on to the consumer, making organic food more expensive to buy than conventionally produced food. Whilst many people are more than willing to pay more for their food because it is organic, during times of hardship and recession, people are less likely to buy organic when they can get the same food for a cheaper price [10].

Organic food purchases are made based on more than just objective and conscious factors. Instead, psychological factors influence these choices [13]. Many studies have looked at attitudes as a factor in forming behavioural intentions and subsequent purchases. However, because consumers themselves report attitudes, most researchers have concentrated on only one sort of attitude, namely explicit attitudes [14]. It is suggested that attitudes

play a role in people's decision-making processes, whether or not they are consciously recognised, implying the presence of implicit attitudes [15]. Consumers' perception of food-related well-being can have a significant effect on their food habits. Additionally, it may help to address a more holistic assessment of a food product than overall liking, health, or environmental concerns [16]. Academic studies have emphasised the importance of ecological issues in regards to the future of our world. Marketing and consumer literature are spotlighting proliferating research on various elements of pro-environmental consumer behaviour to better understand consumer trends in the context of environmental preservation and to pave the way toward a more sustainable society [17,18].

In Turkey, it is reported that in the past decades, the demand for organic foods has greatly expanded [19] and, presently, an increasing number of people opt for the consumption of healthier and organic foods as a result of a higher awareness towards a healthier lifestyle and concern with environmental issues. Galli et al. [20] studied the food transition in Portugal and reported several relevant aspects linked with the shifting into more sustainable practices. Among these points, the study highlighted the gaps in sustainable food policies, and concluded that the transition was weak, despite being most necessary to face the challenges of the United Nations Sustainable Development Goals. However, the recent COVID-19 pandemic seems to have had some influence, particularly in what relates to the consumer. A study conducted in Portugal and Brazil [21] reported the effect of the COVID-19 pandemic on consumption habits in both countries. They concluded that the pandemic positively influenced the consumers towards more sustainable options. In this context, this study was designed to build knowledge about the commercialisation of organic food products in Portugal and Turkey and consumers' habits and preferences. Additionally, the reasons behind their choices and the possible influence of the COVID-19 pandemic were investigated. These two countries, although being Mediterranean countries with some aspects that could connect the citizens, for example, the privileged consumption of vegetables, they also differ significantly in relation to societal aspects that may be linked to the production and consumption of more sustainable food products. Therefore, the comparison of these two realities would be expected to shed some light onto the effect of societal variables on the consumer's habits towards more sustainable foods, such as those produced in organic farming mode vs. those from conventional agriculture, or the fish from aquaculture vs. those from wild capture.

2. Materials and Methods

2.1. Questionnaire Survey

The instrument used in this study was developed with the intent of addressing organic food consumption in two different countries: Turkey and Portugal. The questionnaire was prepared in Portuguese and then translated into Turkish, following a back-translation methodology for validation. Moreover, all factors relating to potential cultural influences (including currency) in the interpretation of the questions were verified during the translation process. The questionnaire was divided into sections to collect information that was considered relevant to the study, with specific sections of relevant questions to five different categories of organic food consumption: Section 1—Consumption Habits, Section 2—Determinants of consumption, Section 3—Commercialisation, Section 4—Environmental and Social Impact, Section 5—Pandemic vs. Sustainable Products, and Section 6—Demographic Data. The full version of the questionnaire is provided as Supplementary materials. The questions were of a different nature, sometimes the participants would have to choose only yes/no; other times, they were asked to choose from a given list, or express their opinions on a provided scale. For example, to measure the determinants of consumption, the participants were asked to classify a set of reasons on a scale from 1, very important, to 6, not important. In evaluating the Environmental and Social Impact, they were asked to express their opinions about a set of statements using a 5-point Likert scale, ranging from 1 = Completely Disagree to 5 = Completely Agree. The Supplementary Questionnaire presents all the questions in these six sections in detail.

The questionnaire was distributed for online participation using the Google Forms tool (Google Inc., Mountain View, California, USA). The survey was conducted on a convenience sample based on the recruitment facility and willingness to answer the questionnaire. The invitation followed a snowball methodology through email and social media contacts. This allowed for easier participation in the survey for residents in both countries. Although it is acknowledged that convenience samples have some disadvantages, they are very useful for exploratory research [22,23].

After receiving informed consent, the questionnaire was used. All of the participants were volunteers, and their responses were anonymously collected. When developing the questionnaire and collecting the data, all ethical issues were appropriately followed. The data was kept strictly confidential so that none of the responses could ever be linked to the participant. The survey was approved by the Viseu Polytechnic Institute's Ethical Committee (Reference N^o. 08/SUB/2020).

2.2. Data Analysis

For the exploration of the data, basic descriptive statistics were used, such as frequencies, means, or standard deviation. The indices for the items used to assess knowledge were calculated as the mean values among the participants for each variable after reversing those items that were false, in order to obtain all items in the same measure. Then, the level of knowledge for each participant was also calculated as the mean scores for all items (again after reversing the false items). Additionally, the level of knowledge was categorised into the following classes: very low knowledge (value $\in [1, 2]$), low knowledge (value $\in [2, 3]$), high knowledge (value $\in [3, 4]$), and very high knowledge (value $\in [4, 5]$). Finally, the relative influence of the sociodemographic variables on the level of knowledge about organic food products was assessed through a tree classification analysis. For this, we used a classification and regression trees (CRT) algorithm with cross-validation [24], and we considered six independent variables: country, age class, sex, living environment, education, and professional area. The minimum change in improvement was equal to 0.005 and the minimum number of cases for parent and child nodes was established as 20 and 10, respectively. A level of significance of 5% was considered in all statistical analyses.

2.3. Characterisation of the Study Sample

The sample included slightly more participants from Turkey than Portugal, but this was expected given the relative size of the two countries involved in the study. Most participants were women in both countries (239 female participants in global), and those who lived mostly in rural environments ($n = 202$) (Table 1). Both samples were mainly constituted by highly educated participants, and most especially in the case of the Turkish sample (representing 57% of those who answered this question in Portugal and 79% in Turkey). The average age was 23 ± 12 years for the global sample, and was older for Portuguese (35 ± 13 years) than for Turkish (28 ± 9 years) samples. With regards to the distribution into age classes, the young adults aged between 18 and 25 years old were more represented (43.5%), followed by adults aged between 26 and 40 years (29.5%) and then senior adults aged 41 years or older (26.9%). A small fraction of the participants were unemployed ($n = 9$ in Portugal and $n = 31$ in Turkey) or retired ($n = 2$ in Portugal and $n = 6$ in Turkey). The students also had little representation ($n = 47$ in Portugal and $n = 34$ in Turkey). A small number of participants were working in the field of healthcare ($n = 28$), food ($n = 12$), agriculture ($n = 9$), or nutrition ($n = 8$).

Table 1. Sample characterisation by country and global.

Sociodemographic Characteristics		Portugal	Turkey	Global
Number of participants		161	199	360
Mean \pm SD ¹		35 \pm 13	28 \pm 9	23 \pm 12
Age (years)	Minimum	18	18	18
	Maximum	67	57	67
		N(%) ²	N(%) ²	N(%) ²
Sex	Female	128(84.2)	111(71.2)	239(77.6)
	Male	24(15.8)	45(28.8)	69(22.4)
Living Environment	Urban	83(54.6)	23(14.7)	106(34.4)
	Rural	69(45.4)	133(85.3)	202(65.6)
Education Level	Secondary School	67(44.1)	33(21.2)	100(32.5)
	University	85(55.9)	123(78.8)	208(67.5)
	Unemployed	9(5.9)	31(19.9)	40(13.0)
	Student	47(30.9)	34(21.8)	81(26.3)
Professional Status	Retired	2(1.3)	6(3.8)	8(2.6)
	Working in Health	11(7.2)	17(10.9)	28(9.1)
	Working in Food	9(5.9)	3(1.9)	12(3.9)
	Working in Agriculture	6(3.9)	3(1.9)	9(2.9)
	Working in Nutrition	0(0.0)	8(5.1)	8(2.6)
	Working in other areas	68(44.7)	54(34.6)	122(39.6)

¹ Mean value and standard deviation (SD). ² N = number of participants, % = valid percentage, i.e., excluding missing values.

3. Results

3.1. Consumption Habits

When asked if the participants were familiarised with the concept of organic farming, 94% of the Portuguese and 78% of the Turkish replied affirmatively. However, the consumption of this type of food is moderate in both countries, as shown in Figure 1. In Portugal, 132 participants say they consume organic food, most of them having it about 2–3 meals/week ($n = 57$) or even 4 to 7 times/week ($n = 41$), while in Turkey, the number of participants consuming organic foods is lower, with 35 consuming only one meal/week, 46 consuming in 2–3 meals/week, and 22 having them at 4 to 7 meals/week, about half of the number of Portuguese participants in terms of this frequency.

Table 2 shows, for a number of foods classified into certain categories, the consumption of more sustainable foods versus the correspondent less sustainable counterparts. The results show that, in general, vegetables and fruits are foods that typically, in both countries, people tend to consume the organic version of instead of those products from conventional agriculture. However, the difference was not so evident when it comes to fish, for which wild capture is still the most important farming method, as well as for milk and its derivatives, which again showed a lower expression of the more sustainable options.

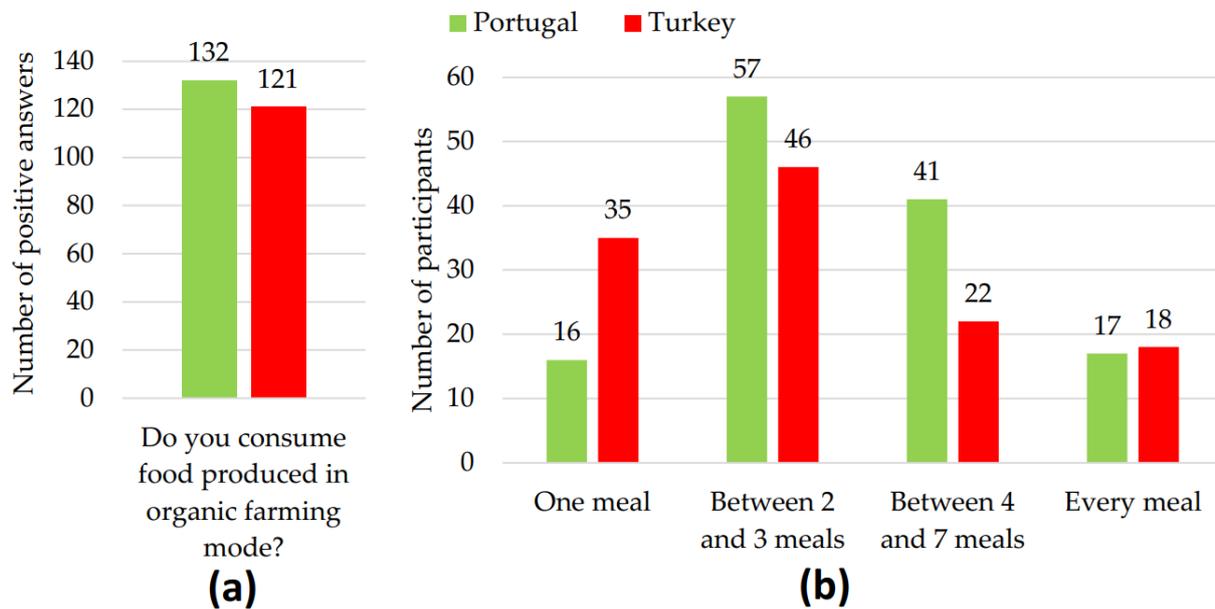


Figure 1. Consumption of organic foods in both countries on a typical week: (a) participants who consume organic foods; (b) Frequency of consumption.

Table 2. Consumption of food from organic and conventional production, according to categories.

Vegetables	Portugal (% Positive Answers)			Turkey (% Positive Answers)		
	CA	OF	Both	CA	OF	Both
Chickpea	39	32	1	37	37	2
Green Pea	48	29	5	34	37	4
Broad Beans ^{PT}	22	39	1	—	—	—
Beans	25	53	3	25	45	2
Lentils	43	14	1	40	30	2
Pumpkin	13	68	3	19	37	1
Eggplant	25	40	2	16	49	2
Broccoli	37	46	8	34	25	2
Tomatoes	11	71	6	16	57	6
Lettuce	11	75	6	20	52	6
Bell pepper	16	57	3	17	50	4
Cucumber	16	58	7	13	59	5
Potatoes	20	63	5	28	42	6
Parsley	16	63	4	18	52	6
Savoy Cabbage	14	66	4	17	37	2
Onion	16	68	8	28	39	5
Chuchu ^{PT}	37	31	2	—	—	—
Turnip	25	45	5	34	23	2
Cauliflower	37	32	4	36	24	3
Spinach	24	52	4	34	34	5
Asparagus	41	13	1	37	16	3
Green Cabbage	22	56	9	33	25	4
Watercress	27	35	2	30	29	4
Beet	27	33	1	30	23	2
Carrot	28	57	7	36	36	6
Arugula	37	25	3	27	39	6

Table 2. Cont.

Fruits	Portugal (% Positive Answers)			Turkey (% Positive Answers)		
	CA	OF	Both	CA	OF	Both
Apple	39	58	18	20	56	5
Orange	36	51	11	31	39	4
Pear	43	39	7	22	48	6
Banana	63	14	1	39	30	4
Blueberry	27	47	4	34	20	3
Raspberry	27	45	4	34	19	3
Strawberry	28	72	11	30	42	8
Pineapple	72	3	1	38	18	2
Persimmon	21	48	3	25	24	2
Plum	33	42	10	20	49	6
Fish	AQ	WC	Both	AQ	WC	Both
Sea bass	45	30	6	18	37	3
Sardine	28	42	4	13	31	3
Hake ^{PT}	44	33	4	—	—	—
Anchovy ^{TR}	—	—	—	24	37	4
Gilthead seabream	47	40	12	17	34	4
Tuna fish	41	33	3	11	42	2
Codfish ^{PT}	39	40	4	—	—	—
Whiting fish ^{TR}	—	—	—	17	29	1
Bonito Fish ^{TR}	—	—	—	17	35	1
Meat	CLP	OLP	Both	CLP	OLP	Both
Rabbit	32	31	1	22	10	1
Pork ^{PT}	53	24	4	—	—	—
Chicken	40	47	10	27	41	6
Turkey	60	17	4	24	20	2
Goatling	37	30	2	19	20	1
Wild boar ^{PT}	28	15	0	—	—	—
Piglet ^{PT}	48	11	2	—	—	—
Sheep	29	28	3	16	37	2
Cow	61	17	5	20	52	5
Dairy & Other foods	CLP	OLP	Both	CLP	OLP	Both
Milk	68	9	4	27	55	11
Cheese	63	16	1	30	47	9
Fresh Cheese ^{PT}	54	18	1	—	—	—
Butter	63	9	0	19	58	9
Cream	58	9	0	39	12	4
Yogurt	63	14	2	19	61	9
Eggs	19	59	10	19	58	9
Margarines	60	6	0	37	11	4

Legend: CA = Conventional Agriculture, OF = Organic Farming, CLP = Conventional Livestock Production, OLP = Organic Livestock Production, AQ = Aquaculture, WC = Wild Capture, ^{PT} Only in Portuguese version, ^{TR} Only in Turkish version.

3.2. Determinants of the Consumption of Organic Foods

Table 3 shows some possible factors that can determine the consumption of more sustainable products. The results reveal that all factors are classified as being the most important, generally. Still, particularly the fact that their production does not use pesticides, they can bring benefits to the human health; they contribute to less pollution of the environment and they can help local farmers. When the two countries were compared, there are systematically more Portuguese attributing the lowest classification, which means that the Portuguese consider these reasons as being of the utmost importance, to a higher degree than the Turkish.

Table 4. Reasons pointed out by the participants not to consume organic foods (N represents the number of participants in each country that do not consume organic foods).

Reasons NOT to Consume Organic Foods	Portugal (N = 29)	Turkey (N = 78)
Their price is generally more expensive than conventional food	59%	45%
They are the same as those produced in a conventional way	10%	5%
They are not on sale near where I live	21%	14%
They are not on sale near my workplace	3%	10%
I am not informed about sustainable products	7%	4%
These products look less beautiful	3%	0%
I do not think they meet all food safety standards	10%	0%

3.3. Commercialisation and the Effect of the COVID-19 Pandemic

Figure 3 shows the places where the participants purchase organic foods. The participants from Portugal refer that they shop for organic foods mostly in places which are close to their home, their workplace, or other daily activities (for 126 participants against only 5 participants who did not have the proximity to the selling points). On the other hand, in Turkey, the fraction of participants for which there is a proximity of selling points is not so expressive (65 participants say the selling points are close, and 56 say they are not close).

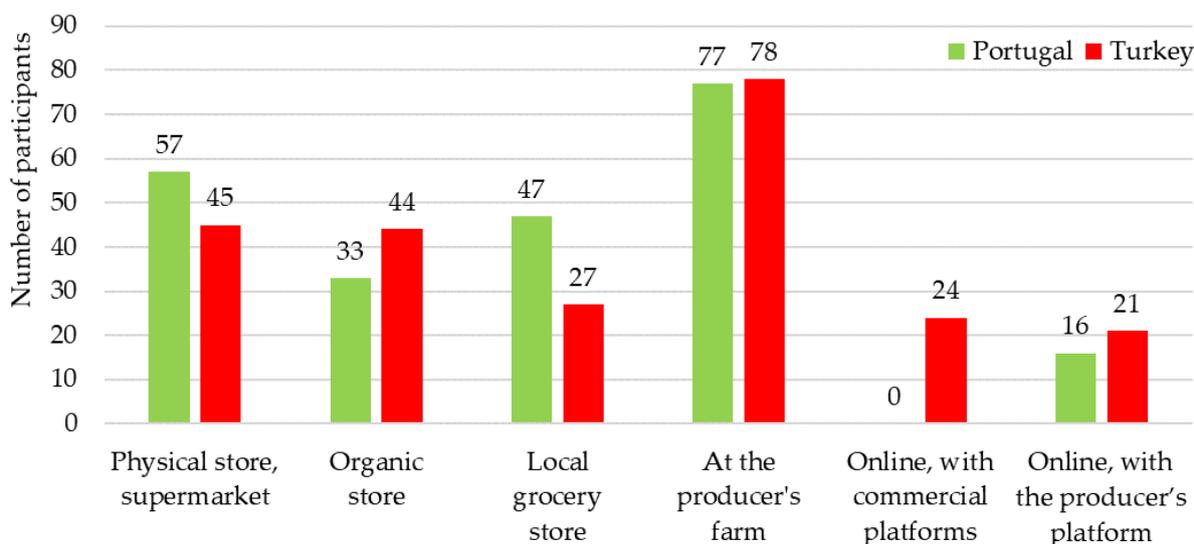


Figure 3. Places where participants purchase organic foods.

When asked if the participants believed there are few places to sell organic foods, many participants agreed (112 and 101 participants for Portugal and Turkey, respectively). One other aspect investigated was the price of these products as compared with conventional foods. Considering the different currencies and living standards, this question was adapted accordingly. In this way, in Portugal, it was verified that 38% were willing to pay a premium price for organic products of up to 1 Euro as compared to the conventional counterpart products, 55% were willing to pay a premium between 1 € and 2 €, and only 8% admitted to paying more than 3 € difference for organic foods. In Turkey, the trend was quite similar, with 38% willing to pay a premium of up to 10 Turkish Lira, 44% ready to pay a premium between 10 and 20 TRY, and 19% accepting to pay a premium higher than 20 TRY. The monthly household income of the participants was also assessed, as shown in Table 5. In the Portuguese sample, about 84% of the participants fall into categories of income that were lower than the average. The results were relatively similar in the Turkish sample, with 77% of the participants falling into categories of income lower than the average.

Table 5. Monthly household income of the participants.

Portugal	%	Turkey	%
Less than 500 €	11.2	Less than 2000 TRY (<126 €)	11.5
From 500 € to 1000 €	26.3	From 2000 TRY to 2500 TRY (126–158 €)	9.6
From 1000 € to 1500 €	27.0	From 2500 TRY to 3500 TRY (158–221 €)	9.6
From 1500 € to 2000 €	19.7	From 3500 TRY to 4500 TRY (221–284 €)	14.7
From 2000 € to 3000 €	7.9	From 4500 TRY to 5500 TRY (284–347 €)	16.0
From 3000 € to 4000 €	4.6	From 5500 TRY to 6000 TRY (347–379 €)	7.7
From 4000 € to 5000 €	1.3	From 6000 TRY to 7000 TRY (379–443 €)	7.7
More than 5000 €	2.0	More than 7000 TRY (>443 €)	23.1
Monthly average income (2021) * = 2750 €		Monthly average income (2021) * = 7830 TRY	

* Source: Salary Explorer—Salary and Cost of Living Comparison (<http://www.salaryexplorer.com/?loc=221&loctype=1#browsesalaries>, accessed on 24 April 2022).

Because the research was conducted during a period covered by the COVID-19 pandemic, the participants were also asked about their opinions regarding the effect of this anomalous world situation on the commercialisation of organic foods. One of the aspects investigated was whether the participants thought that society has started to give more value to local products and products from organic farming owing to COVID-19. The results showed that a great majority of participants in both countries agreed with this (81% for the Portuguese and 80% for the Turkish samples). Another question was about whether the participants believed that due to the new Coronavirus, the consumption of these products had increased. To this matter, 41% of the Portuguese supposed that the consumption had increased, while for the Turkish, this percentage was higher (71%). Still, 35% of the Portuguese and 21% of the Turkish replied they did not know if their consumption has increased due to the COVID-19 pandemic.

3.4. Environmental and Social Impact

The responses of the participants to the questions about knowledge and perceptions in both countries are presented in Table 6. The results show a relatively similar trend in both countries included in the study, and, most importantly, the participants were able to identify the false information and expressed a strong disagreement with those false statements, revealing a good knowledge about the topics addressed in the study. On the other hand, a very high fraction of participants in both countries did not express agreement or disagreement with the statement that assessed the perception that organic agriculture is underdeveloped in their respective countries. Regarding the perception about organically obtained foods being valued by society, this perception is solid for the Portuguese but not so much for the Turkish.

For each of the statements K1 to K5, the corresponding indices were calculated as the mean values among all the participants, after reversing the false items, in order to obtain all items in the same measure from one to five, in the direction of increasing knowledge. The values obtained for the indices are given as means and standard deviations, as follows:

- K1. Original statement: Index = 4.28 ± 1.04
- K2. Reversed statement: Index = 3.71 ± 1.26
- K3. Reversed statement: Index = 3.93 ± 1.24
- K4. Original statement: Index = 3.67 ± 1.35
- K5. Reversed statement: Index = 4.03 ± 1.27

These results indicate that the statements K1 and K5 are those for which there is a higher level of knowledge, i.e., their mean values are closer to five, the top value of the scale. These statements are related to the lower environmental impact of organic foods, indicating that these aspects are very present in the participants' minds.

Table 6. Knowledge and perceptions about the impact of organic foods.

Statements	Country	Disagreement			Agreement	
		1	2	3	4	5
		Frequency				
Factual knowledge						
K1. Organic farming is more environmentally friendly compared to conventional farming	Portugal	5	2	19	34	92
	Turkey	7	3	28	30	88
K2. Natural fertilisers are not used in organic farming (False)	Portugal	57	22	45	13	15
	Turkey	56	42	39	8	11
K3. Organic farming does not contribute to reducing the ecological footprint (False)	Portugal	78	33	27	9	5
	Turkey	62	38	23	19	14
K4. Organic farming does not use harmful pesticides	Portugal	8	22	32	26	64
	Turkey	20	19	24	36	57
K5. Pesticides do not contribute to environmental pollution (False)	Portugal	108	25	7	4	8
	Turkey	59	23	45	14	15
Perceptions						
P1. This mode of agriculture is underdeveloped in my country	Portugal	6	13	56	53	24
	Turkey	5	16	50	41	44
P2. Organically obtained foods are valued by society	Portugal	1	29	61	42	19
	Turkey	11	11	19	35	80

Additionally, the level of knowledge for each participant was also calculated as the mean score for all items (again after reversing the false items), and then categorised into very low knowledge, low knowledge, high knowledge and very high knowledge. This variable was submitted to a tree classification analysis as described earlier. From the six sociodemographic variables considered, only four were included in the obtained tree, which is presented in Figure 4, thus, the variables of sex and living environment were not discriminant under the conditions considered. This solution is characterised by estimated risks for resubstitution and cross-validation of 0.403 (with standard error of 0.029) and 0.479 (standard error of 0.029), respectively. The tree has three levels and 11 nodes, of which six are terminal, and allowed us to classify 59.7% of the cases correctly. The results in Figure 4 show that for the whole sample, there were no participants with a very low level of knowledge, there were only 5.6% with a low level of knowledge, there were 39.9% with a high level of knowledge, and most participants showed a very high level of knowledge, with a proportion of 54.5%. Figure 4 further shows the relative importance of the different sociodemographic variables in the level of knowledge, with age class being the most important discriminating variable, separating the younger and older participants. The second discriminant was the professional area for all age classes. In level three, for the participants aged up to 40 years and employed in food, nutrition, or other areas, the next discriminant was country, so in Portugal, the percentage of participants with a very high level of knowledge was much higher when compared with Turkey (63.3 and 38.5%, respectively). Regarding the participants aged 41 or over and with professions linked with agriculture, food, nutrition, health, or other areas, the following discriminating variable was education, with those who had a university degree, revealing a higher percentage in the class of very high knowledge (62.9% as compared with 39.3% for those with secondary school-level education).

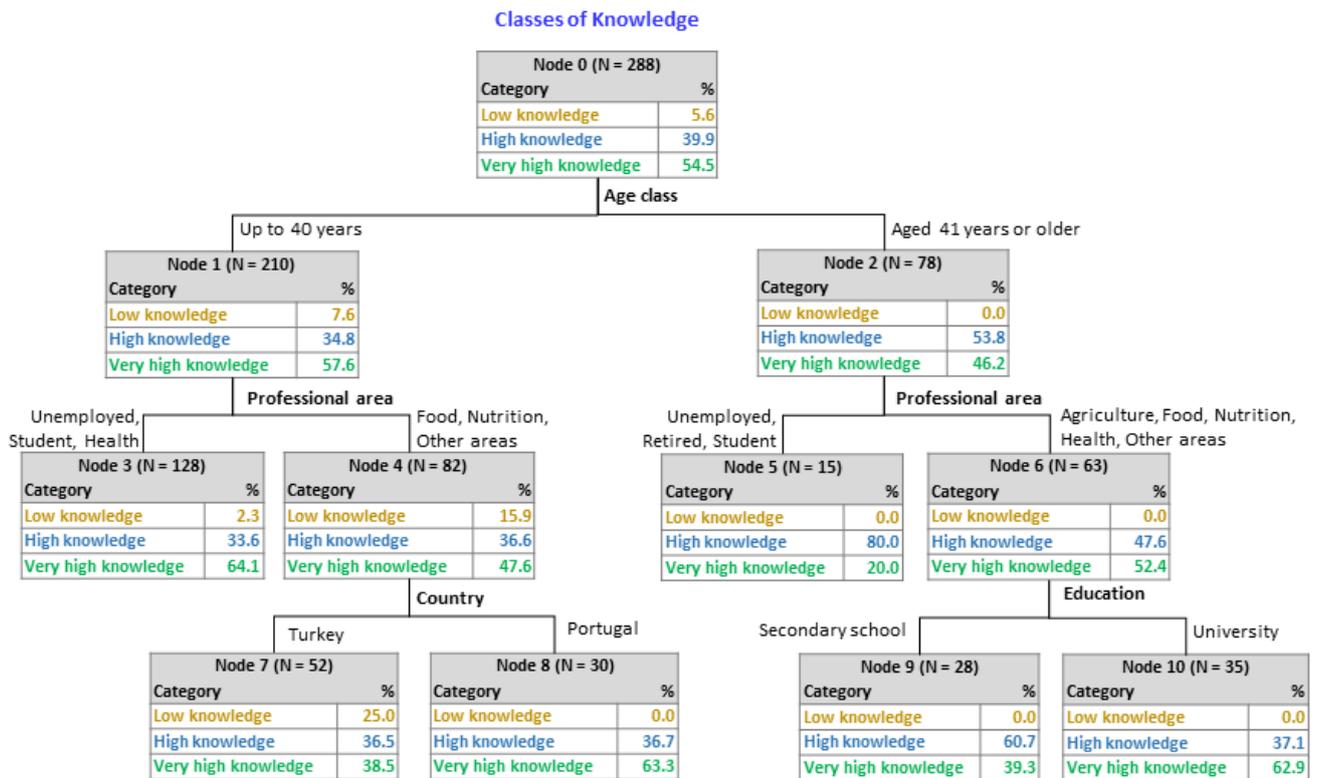


Figure 4. Tree classification for the influence of the sociodemographic variables on the level of knowledge.

4. Discussion

With this work, we intended to characterise two groups of consumers (Portuguese and Turkish) regarding the consumption of food products originating from organic farming. Regarding the knowledge about organic agriculture, most Portuguese respondents consider that they have this perception, and other authors have also verified this high knowledge of the concept of organic agriculture on the part of consumers [25–28]. However, Turkish respondents showed such lower values, which indicates that awareness programs on organic farming may be necessary for this country. Additionally, regarding the consumption of organic farming products, a higher percentage of Portuguese respondents indicated that they consumed organic farming products when compared to Turkish consumers. In this way, the knowledge and awareness of organic farming can affect the consumption of these products. Regarding the organic products consumed, the respondents essentially consumed organic fruits and vegetables. Aydogdu and Kaya [29] also verified the higher consumption of these products in Turkey and that consumers buy them directly from the producer. We also found that a large percentage of these consumers buy organic products directly from the producer or in supermarkets and hypermarkets. Purchasing these products directly from the producer can be important for lowering their cost, since there are fewer intermediaries in the marketing chain. It may also be essential to carry out publicity actions for other organic products such as meat, milk, and milk's derivatives in these marketing centres, as well as the dissemination of information about different producers of these products and their location.

When we analysed the reasons for the consumption of organic farming products, we found that the strongest motivations are associated with health benefits and lower pollution. The positive impact of these health concerns on the attitude towards organic foods has also been identified in other studies in Portugal [30], Turkey [31], Serbia [32], Lebanon [28], Italia [33], Sweden [34], and other countries [35].

In our study, higher prices were identified as being one of the main factors leading to the non-consumption of organic products in these two countries. Although consumers in our study are willing to pay more for organic products than conventional products, only a small percentage are willing to pay the actual price difference between these two types of products. Akgüngör et al. [31] refer that Turkish consumers were willing to pay 36% more for organic farming products, and Serbians were willing to pay 10–20 or 20–30% more than conventional food [32].

According to Sheth et al. [36], consumption value theory suggests that consumers choose what they want to buy according to the following consumption values: functional, emotional, social, conditional, and epistemic. Waseti and İrfanoğlu [37] verified, in a study carried out in Turkey, a positive direct significant relationship between functional value (quality + price) and emotional value, and also a negative direct relationship between social value and organic food purchase intention. So, consumers with a higher sustainable consumption attitude have higher perceived values of organic food, and they are more likely to buy organic food [38]. Thus, marketing actions to increase their consumption could emphasise the benefits to health and the environment to have a better result in the consumer's attitude.

A country's political conditions can affect all economic activities. Agricultural and food production policies can significantly influence the organic food market [19]. Governments that encourage healthy eating habits and food production would indirectly promote the choice of organically produced foods. In Turkey, loans with reduced interest rates are available from the Agricultural Bank and Agricultural Credit cooperatives for the organic sector. In Portugal, as a result of the European Union Policies, incentives have been established to shift from conventional to organic farming. The European Union Organic Action Plan is expected to play a pivotal role in developing sustainable food systems, which are at the centre of the European Green Deal. The European Commission has set a target that by 2030, a minimum of 25% of the agricultural area must be devoted to organic farming. Additionally, a significant increase in organic aquaculture must also be sought [39].

Before the COVID-19 pandemic in Portugal, the consumption of organic foods was still modest. Portugal represents a critical case by being the Mediterranean country with the highest per capita food footprint (about 1.5 gha/person), while in Turkey, the value is lower than 1 gha/person [40]. According to Graça et al. [41], who reported the main actions developed in Portugal under the National Program for the Promotion of Healthy Eating (PNPAS) during the period 2012–2019, there was a total absence of data in the ambit of the National Strategy for Organic Agriculture. A study conducted by Nunseet al. [42] based on a survey applied to 250 respondents (using a non-probabilistic—convenience—sampling method) evaluated ten reasons linked to organic purchasing decisions. Their results showed the dominance of motivations related to health benefits, the absence of genetically modified organisms, and, in third, the concerns with environmental impact. Marreiros et al. [43] studied the sociodemographic characteristics that determine food choice towards organic products in Portugal and Germany and observed that some of those variables were strongly related to consumers' preference for organic food products, thus constituting relevant segmentation criteria. Goktuna and Hamzaoglu [44] also analysed the segmentation of the Turkish market for organic foods and concluded similarly that sociodemographic features constitute market segmentation criteria. They produced a profile of the organic food demand consumers in Turkey as mainly being mature, married, with a high income, being physically active, and predominantly concerned about health instead of the environment. According to Halit et al. [45] the organic food market in Turkey has experienced significant growth in the near past, based on a survey conducted on 215 consumers. The reasons pointed out for their consumption include being healthier, tastier, fresher, and better for the environment.

Consumers surveyed in our work placed a greater value on local organic products as a consequence of COVID-19. They were also designated as being products with a lower environmental impact. Although before the pandemic, this collective environmental

concern and sustainability already existed, the COVID-19 pandemic motivated people even more to assume this responsibility [46]. This may be explained because the pandemic has increased the importance of food products for consumers' health, thus influencing when they have to make decisions about food products [47]. Therefore, the pandemic could be a driving force for the consumption of organic products in these two countries (Portugal and Turkey). This increase in the consumption of organic products purchased online during the pandemic has already been reported by some authors [48]. In this way, it could be an opportunity for government measures to support disseminating the benefits of the consumption of these products for health and the environment.

5. Conclusions

This study showed the importance of food choice and the motivations to consume more sustainable food products across two countries. The results showed that both in Portugal and Turkey, people tend to consume more vegetables and fruits produced in organic mode than the same type of products obtained from conventional agriculture. On the other hand, products derived from milk are consumed mainly from conventional production, and in terms of fish, the wild capture still rules, with the choice for aquaculture fish having still low expression. The reasons that incentivise the participants to consume organic farming foods include the absence of pesticides and their lower environmental impact, the benefits for human health and for local farmers. On the other hand, higher prices are the main obstacle in opting for organic products. The proximity of selling points to the living place is among the motives also pointed out as motivating their purchase. Concerning knowledge, it was observed that most people have a very high level of knowledge about the sustainability aspects related to organic foods and the differences between the organic and conventional production modes. Finally, it was verified that in Portugal, people believe that a higher value is attributed by society to the organic products when compared with the perception in Turkey.

Although this research allowed some valuable insights into the consumption of more sustainable foods in Portugal and Turkey, as well as the reasons behind food choices aimed at consuming organically produced foods, it is important to highlight some limitations, namely the recruitment of participants, which followed a snowball methodology on a convenience sample.

This results in uneven group representativeness (for example, more women than men are usually more willing to respond to questionnaire surveys, or a high number of people with a higher education level resulting from the list of contacts to whom the invitation was sent). Additionally, because the research was conducted in two different countries, involving a translation of the data-collecting instrument and an adaptation into some particular aspects of each country's food culture, some difficulties were found when designing the questionnaire, for example, concerning the meat consumption, which is quite different in Catholic or Islamic countries, or in the consumption of fish, which in Portugal is based on the Atlantic Ocean fauna whereas in Turkey it is based on the Mediterranean sea species.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/agronomy12061385/s1>, Supplementary Questionnaire.

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Institutional Review Board Statement: This research was implemented taking care to ensure all ethical standards and followed the guidelines of the Declaration of Helsinki. The development of the study by questionnaire survey was approved on 23 September 2020 by the Ethics Committee of Polytechnic Institute of Viseu (Reference N^o. 08/SUB/2020).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data are available from the corresponding author upon request.

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