



Determinants of the Intention to Purchase Organic Food Products among Portuguese Consumers

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Abstract

The demand for organic food products has been increasing over the last few years in Portugal and worldwide because consuming these products benefits health and the environment. Also, its production values animal welfare and promotes economic development, improving the living conditions of rural communities in low population-density territories. Thus, the general objective of this research was to identify sustainable factors that impact the intention to purchase organic food products, allowing the production of knowledge about the attitudes, preferences, habits, and behaviors of Portuguese consumers about these types of products. To achieve this objective, a digital questionnaire was applied between January 9, 2024, and February 6, 2024, to collect the data. It was possible to select a sample of 413 consumers of Portuguese nationality, whose ages varied between 19 and 67 years old. The majority of respondents lived in urban communities (69.2%) of the Bragança (64.0%), Porto (10.4%), and Vila Real (5.1%) districts; had a positive knowledge level about organic food products (83.8%); and, recognized the European Union organic logo (68.0%). The most frequently consumed organic food products were fresh vegetables (62.7%) and fresh fruits (59.6%), which were usually purchased directly from the producer (50.5%). The results revealed that attitudes, environmental concerns, health awareness, and perceived price determine the intention to purchase organic food products. In addition to having a positive impact, these factors explained 57.5% of the variance of this variable, revealing that other equally important factors that were not considered in this study may impact the intention to purchase organic food products.

Keywords: Organic products, Sustainability, Health, Environment, Consumer.

Introduction

The production of organic foods has evolved into a more globalized system (Raynolds, 2004). Organic food consumption is prominently associated with new global trends, and it is an integral part of a careful diet to change and be healthier (Johnston & Cairns, 2012).

The production of organic foods is a global system that includes farm management and food production, combining best practices in terms of climate and environment, the conservation of natural resources and biodiversity, and the application of demanding standards in terms of animal welfare and health, as well as strict production regulations in line with the growing demand by consumers for products produced through the use of natural ingredients and processes. In this context, organic production plays a dual social function, namely: (1) it supplies a specific market by responding to the growing demand, and (2) it provides goods that contribute to the protection of animal welfare and health, the protection of the environment, as well as to the development of rural areas (Regulation (EU) 2018/848). Organic farming is important because it contributes to decarbonization, promotes the circular economy and the regeneration of the nutrient cycle, efficient water management, and soil rehabilitation, and avoids synthetic fertilizers, herbicides, and pesticides.

The degradation and deterioration of the environment and its harmful repercussions on human beings and their health have made this topic of great relevance for researchers, producers, consumers, and policymakers (Yadav & Pathak, 2016). So, the awareness about the impact of consumers' actions on the environment and the growing concern about health means that consumers are now more knowledgeable about the benefits of this type of products and are particularly demanding regarding the criteria that support their choice and purchase (Onyango, Hallman & Bellows, 2007).

The production of healthy organic foods is achieved by implementing sustainable agricultural practices with reduced impact on the ecosystems. Sustainable consumption and

production are reported in the literature as fundamental requirements for the much-desired sustainable development. Through consumers' choices, they can shape their demand for food so that it is produced according to a specific production process in a specific place of origin (Bazhan, Sabet & Borumandnia, 2023). In other words, consumers can select products and processes that consider sustainability values, namely, with geographical indications, organic farming certification, and local brands. In this context, this study aims to examine the behavior of Portuguese consumers of organic food to identify sustainable factors that are decisive in the consumption and intention to purchase these products.

This study is structured in six sections. The first section provides a contextualization of the topic, justifying its relevance and current interest. The second section consists of a literature review on attitudes, health awareness, environmental concerns, perceived price, and purchase intentions, which supports this research and defines the study hypotheses. The third section identifies the study and the sampling type, the process of data collection, the statistical procedures, and the ethical issues. The fourth section presents and analyzes the results. In the fifth section, the results are discussed. Finally, the sixth section presents the main conclusions of this study, referring to the main limitations and possible lines of future research.

Literature Review

Nowadays, consumers are essential to ensuring the sustainability of economies, first and foremost, through their choice of food (Stojic & Dimitrijevic, 2020). Consumer demand for organic products sends a strong message to several stakeholders, namely sellers, producers, and other stakeholders in the value chain. Rodet (2016), founder of AGROBIO (Portuguese Association of Organic Agriculture), highlights 12 reasons that legitimize the choice of these goods, namely: (1) nutritional value, these products have more significant amounts of antioxidants, vitamins and minerals; (2) flavor, in soils fertilized and regenerated with organic matter, plants develop a true aroma, color and flavor; (3) health, since the production of these products does not allow the use of chemical

fertilizers or pesticides; (4) more fertile soils, agricultural practices aim to conserve and improve soil fertility, increasing the organic matter content; (5) pure water, as no chemicals are used, the likelihood of soil and groundwater contamination is reduced; (6) biodiversity, with local seeds and varieties being valued; (7) certification, the quality of organic producers is assured by the certification seal provided by independent regulatory entities, in accordance with the European legislation on Organic Farming; (8) the rural world: when producing these goods, one seeks to respect the Environment and Nature; (9) the farmer's dignity: the production of these goods prevents the abandonment of rural areas, highlighting the role of the farmer/nature caretaker; (10) education, through the practice of Organic Farming, one learns to respect the Environment; (11) employment, new opportunities for permanent and rewarding employment are created due to ecological practices and the size of farms, adapted to a human scale; (12) the future, producers of this specific type of product are bold, innovative, and continually seek to adapt traditional practices and knowledge to the most modern knowledge, discarding the use of products with a high environmental impact.

Sustainable consumption and production are reported in the literature as fundamental requirements for the much-desired sustainable development. Organic food consumption is attracting more and more attention due to its economic, social, and environmental effects (Papargyropoulou et al., 2014). As mentioned before, through their choices, consumers select products and processes that consider sustainability regulations, namely geographical indication and organic farming certification. In this context, this research aims to describe and understand the behavior of Portuguese consumers of this type of product and to identify the factors associated with sustainability and health that are determinants of organic food consumption.

Attitude is how a person reacts or positions themselves towards situations, events, or people, reflecting beliefs, feelings, and dispositions, which can be positive, negative, or neutral. Ethically, the choice of organic food products varies from country to country, industry to industry, and individual to individual (McEachern & McClean, 2002). Generally, the consumption of organic products is defined as a

multidimensional phenomenon that includes the conservation of the environment, the responsible use of non-renewable resources, pollution minimization, the preservation of species, and animal welfare. So, the decision-making process is influenced by the beliefs, values, and customs. Consumers' growing awareness regarding organic food production issues has contributed to an increase in consumers' vocalization of ethical concerns (McEachern & McClean, 2002).

The consumer of organic food products is motivated by the positive consequences that the act of purchasing these products has on him/herself, that is, egoistic and/or altruistic motivation. A consumer with an egoistic motivation is concerned with satisfying his/her well-being and seeking organic foods because he/she considers them healthier and thus has a healthier life. A consumer with altruistic motivation shows a special interest in social well-being, seeking organic products because he/she considers them more beneficial from an environmental and ethical point of view (Cruz, 2011; Birch et al., 2018).

Health awareness and environmental concerns are among the most significant factors in consuming organic food products (Chen, 2009). Health awareness is a concept used to verify if a person is prepared to do something for their health. Consumers who care about their health seek to reduce disease risk by taking the necessary precautions to stay healthy. Although organic food products are more expensive, they are healthier, tastier, and less harmful to the environment when compared to conventionally produced food products (Michaelidou & Hassan, 2008).

According to Lockie et al. (2002), the healthy and natural content of foods and the price are among the most significant factors that cause the consumer's purchasing decision. The healthiness associated with organic foods and the fact that they are of increased quality and free from chemicals are factors that consumers prioritize when making a purchase. Several studies consider health awareness as one of the main motives for consuming organic foods, with consuming these foods considered an investment in the individual's health. Consumers who are aware of health issues are motivated to improve their quality of life by

maintaining their health due to their concern and awareness of their well-being. In this context, organic foods, because they are produced on a smaller scale and in a natural way (Murshed & Uddin, 2020), are considered safe, as pesticides and synthetic fertilizers are residual (Pacho, 2020). A study by Mann et al. (2012) in Switzerland showed that consumers considered organic products healthier than conventional ones. Furthermore, according to Pellegrini and Farinello (2009), one in two Italian consumers believes that organic food products are tastier than conventional foods. Similarly, the research by Mohamed et al. (2012), which included consumers in Cairo, Egypt, showed that, because they are produced naturally, women considered organic food products much more delicious than men.

The purchase of any product, including organic products, must consider the consumer's environmental concerns. Environmentally aware consumers are willing to contribute to protecting and conserving the environment (Basha et al., 2015), one of the critical factors determining purchasing intention and attitude. In addition, it is a socially accepted norm affecting consumers' sense of initiative to protect their consumption choices and the environment (Unal et al., 2019). According to Gracia and Magistris (2007), consumers most concerned about environmental damage and pollution demonstrate a greater predisposition to buy organic food products because, besides being healthier, they believe that producing these products has a lower environmental impact. Environmental issues and animal rights strongly impact organic food purchasing attitudes. Environmental concern describes an individual's responsibility to maintain and preserve a clean and unpolluted environment (Suanmali et al., 2020). It is defined as the degree to which individuals are aware of environmental issues and express a willingness to support actions associated with protecting natural resources and environmental safety (Naz et al., 2020). Thus, individuals expressing more concern about environmental issues adopt more positive behaviors and attitudes toward organic products. Furthermore, consumers with environmental concerns are more likely to detect false or misleading environmental claims than those less concerned with the environment (Klabi & Binzafrah, 2022). In this sense, these

consumers are more likely to have more environmentally friendly behaviors, specifically, purchasing organic products, recycling, and energy saving (Zhang et al., 2018). For example, food products such as meat, especially pork and beef, are known to have a high contribution to environmental degradation, which leads many people, especially those who care about the environment, to reduce their intake of these products (Elferink et al., 2008). In short, health, quality, and food safety affect the consumption of organic food products since they reduce health and environmental risks. That is why consumers with environmental concerns who value their health are willing to pay more for this type of goods (Canavari, Nocella & Scarpa, 2003; Govindasamy et al., 2018).

Price is an indicator of the quality and value of a product. According to Unal et al. (2019), the price can be defined as something the consumer is willing to give up to obtain a product. The production process of organic products is more expensive than the traditional production process of conventional products (Muhammad et al., 2015). Furthermore, organic products should be clearly distinguished from traditional products through certification by a recognized and independent organization.

Grassi (2008) argues that ability and willingness to pay are two distinct concepts. Consumer willingness to pay is the highest price a consumer is willing to pay for a product without any financial constraint. Consumers who consume a product with significant benefits are prepared to pay a higher price, even with a limited budget. The experience and the frequency of consumption of organic products are the variables that considerably impact the willingness to pay. Individuals who taste organic products once are more likely to repurchase them because they care about the environment and their health. So, they do not mind to pay more for these products (Suanmali, 2020).

Sarikaya (2007) demonstrated that benefit, value, trust, and responsibility stand out in consumers' opinions and purchasing behaviors concerning organic products. In addition, it has been proven that the limited accessibility and the high cost of organic food products are the two most significant variables that hinder

consumers' preferences when purchasing organic foods.

Knowledge about organic food products is essential, as it allows consumers to judge their uniqueness, characteristics, and quality compared to conventional ones (Pacho, 2020). According to Hossain and Lim (2016), information about organic farming should be disseminated through newspapers, television, social media, advertisements, and specialist articles to improve knowledge and raise consumer awareness.

Numerous studies confirm that knowledge is associated with organic food purchases (Suanmali et al., 2020). In this sense, adequate education and awareness among young people in schools and colleges will increase concerns among consumers, especially young consumers; hence, awareness is a very relevant and important indicator in developing favorable attitudes in young consumers (Lang et al., 2014).

Purchase intention is considered fundamental to the final purchase act. Without a positive intention, the final behavior will not exist. Hughner et al. (2007) found that although 67% of consumers have positive attitudes towards organic food products, only 4% complete the purchase intention. Unfortunately, declared positive intentions do not always impact purchase decisions (Witek & Kuzniar, 2021).

Consumer knowledge about the benefits of organic products has a more significant impact on purchase intention (Kaufmann et al., 2012). Health awareness is also a determining factor in purchasing organic food since health benefits are closely associated with individuals and families.

Given the above, the next hypotheses were defined in general terms:

H₁: More favorable consumer attitudes towards organic foods increase the intention to purchase.

H₂: Consumers with greater health awareness are more willing to purchase organic products.

H₃: Consumers who are concerned about the environment try to purchase organic products.

H₄: The perceived price positively impacts the intention to purchase these goods.

Research Methodology

This is a quantitative, cross-sectional study developed using a non-random convenience sample. According to Mattar (2001), this sample type is often used to test concepts or obtain ideas about a particular subject of interest. This research surveyed individuals of Portuguese nationality aged 18 or more years old. The data were collected between January 9, 2024, and February 6, 2024. For this purpose, a questionnaire was used to collect information on the study topic.

The questionnaire was organized into six sections. The first section explained the study's topic, objectives, and scope. The second section contained an informed consent form to which respondents had to agree to continue filling out the questionnaire. The third section included socioeconomic questions that allowed the consumer profile to be outlined, namely, nationality, district of residence, communities in which the consumer lives (rural/urban), gender, age, marital status, educational qualifications, employment status, monthly household income, household size and number of dependent members (underage consumers) in the household. The fourth section included questions about purchasing organic products, such as purchase frequency, the household member responsible for the purchase, consumption frequency, and place of purchase. The fifth section consisted of the scales "Attitudes," "Health awareness," "Environmental concerns," "Perceived price," and "Purchase intention," which are part of the questionnaire developed and tested by Bazhan, Sabet, and Borumandnia (2023). These dimensions included statements to which the respondent had to indicate their agreement level using a Likert-type scale ranging from 1 (Totally disagree) to 5 (Totally agree). Finally, the sixth section of the questionnaire also included 10 statements for respondents to mark as "True," "False," or "I do not know," which allowed consumers' knowledge about organic food products to be assessed (Bazhan, Sabet and Borumandnia, 2023). Each statement correctly identified by the respondent was given one value, and each statement marked incorrectly or the answer "I do not know" was given zero values. This assessment was then converted into a percentage ranging from 0 to 100%, with 10 values corresponding to 100%. The remaining values were obtained using the Rule of Three.

Finally, the following classification was used to distribute the respondents according to their level of knowledge: very insufficient: from 0 to 19%; insufficient: from 20 to 49%; sufficient: from 50 to 69%; good: from 70 to 89% and very good: from 90 to 100%.

The questionnaire was emailed to acquaintances via social networks, namely Facebook, Instagram, and LinkedIn, to reach the most significant number of participants. The data were edited and processed using statistical software appropriate to Humanities and Social Sciences. Central tendency and dispersion measures were calculated for quantitative or superior variables and frequencies for nominal and ordinal variables (Pestana & Gageiro, 2014; Maroco, 2021).

Subsequently, an Exploratory Factor Analysis (EFA) was developed to validate the dimensions of the questionnaire. To assess the adequacy of the sample, the Kaiser-Meyer-Olkin (KMO) was determined (Field et al., 2012). The internal consistency of the dimensions was tested using Cronbach's Alpha coefficient (Pestana & Gageiro, 2014; Maroco, 2021). According to Pallant (2020), this coefficient should be greater than 0.7 to be acceptable.

Finally, a multivariate linear regression model was estimated to identify sustainable determinants that impact the intention to purchase organic food products. This statistical technique analyzes the association between a dependent variable (purchase intention) and two or more independent variables (attitudes toward organic food products, health

awareness, environmental concerns, and perceived price). The R^2 coefficient was calculated to measure the proportion of variability of the dependent variable explained by the independent variables (Gageiro & Pestana, 2006). Tolerance and the Variance Inflation Factor (VIF) were calculated to confirm the absence of multicollinearity. The significance level used was 5%.

Respondents received an informed consent form compliant with the General Data Protection Regulation (Law No. 48/2019). In this context, respondents were duly informed about the purpose and scope of the research and the voluntary nature of their participation. Also, the confidentiality of the data was guaranteed.

Results

A total of 413 valid responses were obtained from Portuguese consumers. Considering the type of research and the number of variables analyzed, the sample size meets the requirements to ensure statistical power (Malhotra, 2019).

Consumers' ages varied from 19 to 67 years old. The mean of the age variable was 44.7 years old ($SD = 11.069$), and the median and mode were 47 and 48 years, respectively.

Concerning the district of residence, the results presented in Figure 1 show that most respondents live in the North of Portugal, specifically in the Bragança (64.2%), Porto (10.4%) and Vila Real (5.1%) districts.

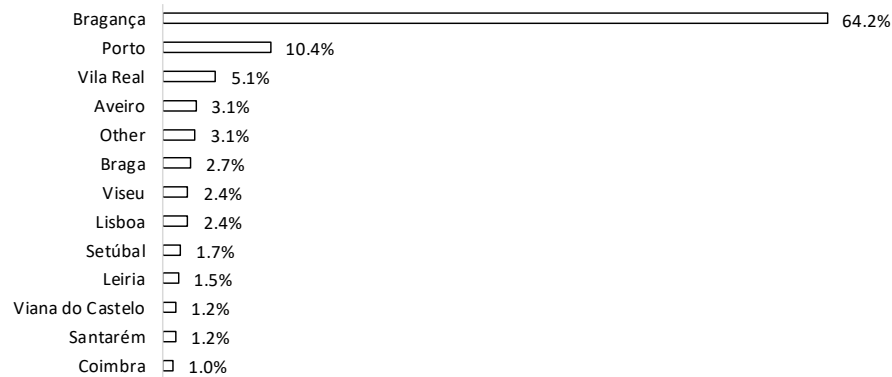


Fig 1. District of residence of the respondents

The majority of the respondents lived in urban communities (69.2%), were female (59.8%), single (56.4%), had higher education qualifications (83.3%), and lived in a household with a monthly income ranging from 820 to 2,460 euros (74.8%). Notably, only 7.3% of the respondents responded that they had an income of less than 820 euros, and 6.5% stated that they had an income of more than 3,280 euros (Table 1).

Regarding the respondents' employment status, 86.4% were employed, 3.6% were unemployed, 5.6% were students, 3.4% were retired, and 1.0% had another employment status (student-worker, scholarship holder, or domestic worker). Regarding the household composition, households consisting of 2 or 3 members prevail (56.0%), and the majority do not have children or dependents (60.8%), as shown in Table 1.

Table 1: Consumer profile (N = 413)

Variable	Categories	Frequencies	
		Absolute (n)	Relative (%)
Community of residence	Rural	127	30.8
	Urban	286	69.2
Gender	Female	247	59.8
	Male	166	40.2
Age	18 to 44 years old	165	40.0
	More than 44 years old	248	60.0
Marital status	Single	233	56.4
	Married/cohabitation	44	10.7
	Divorced/separated	131	31.7
	Widowed	5	1.2
Educational qualifications	1 st cycle	1	0.2
	2 nd cycle	1	0.2
	3 rd cycle	6	1.5
	Secondary	60	14.5
	Higher or equivalent	344	83.5
	Missing	1	0.2
Monthly household income level	Less than 820 €	30	7.3
	820 to 1,640 €	171	41.4
	1,641 to 2,460 €	138	33.4
	2,461 to 3,525 €	47	11.4
	More than 3,525 €	27	6.5

Employment status	Employed	357	86.4
	Unemployed	15	3.6
	Student	23	5.6
	Retired	14	3.4
	Other	4	1
Household size	1 person	76	18.4
	2 people	120	29.1
	3 people	111	26.9
	4 people	89	21.5
	More than 4 people	17	4.1
Number of dependents (children)	None	251	60.8
	1 person	104	25.2
	2 people	54	13.1
	3 people	4	1.0

As mentioned, knowledge is essential because it allows consumers to assess the specificity, characteristics, and quality of other products available on the market. Most consumers recognize the EU organic logo (68.0%), although 31.4% do not realize it (Figure 2).

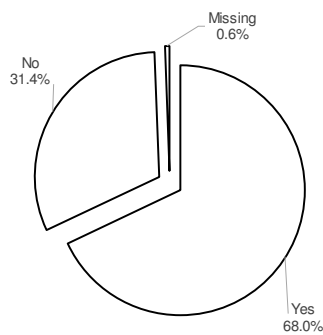


Fig 2. EU organic logo knowledge

The most sought-after and consumed foods, with more than 30% of responses, were: “Fresh vegetables” (62.7%), “Fresh fruit” (59.6%), “Olive oil” (44.1%), “Honey” (40.7%) and “Eggs” (39.0%). Wine, milk, and dairy products were

Generally, the knowledge level about organic products was sufficient ($\bar{x}$ = 64.5; SD = 20.949). Furthermore, considering the respondents' distribution by knowledge level, only 16.2% recorded negative knowledge. The overwhelming majority recorded a positive level of knowledge (sufficient: 26.6%; good: 42.9% and very good: 14.3%), as shown in Figure 3.

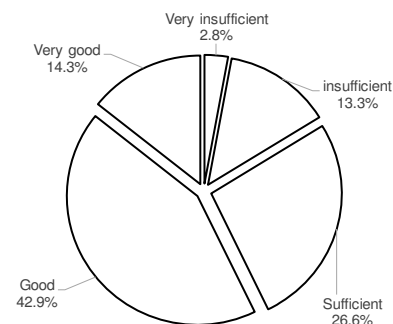


Fig 3. Knowledge level of organic food products

the least sought-after, with 9.9% and 13.6%, respectively. Perhaps because these products can be preserved for long periods, they are purchased only once a year in larger quantities (Figure 4).

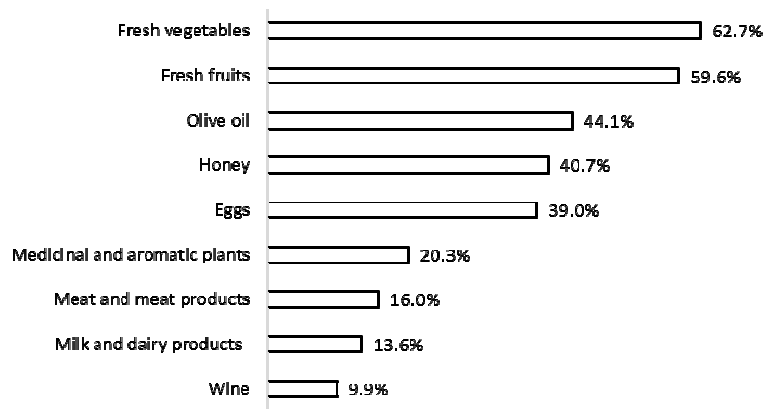


Fig 4. Most frequently consumed organic food products

Regarding the place where organic food is purchased, 50.5% of the respondents buy "Directly from the farmer," 49.2% choose to buy in "Supermarkets," and 45.0% prefer to buy

these products in "Fairs or local markets," especially fresh products. Even so, 11.8% buy in "Organic product stores," 4.8% buy "Baskets directly delivered to their home," and 0.3% buy in "Fairs/Events" (Figure 5).

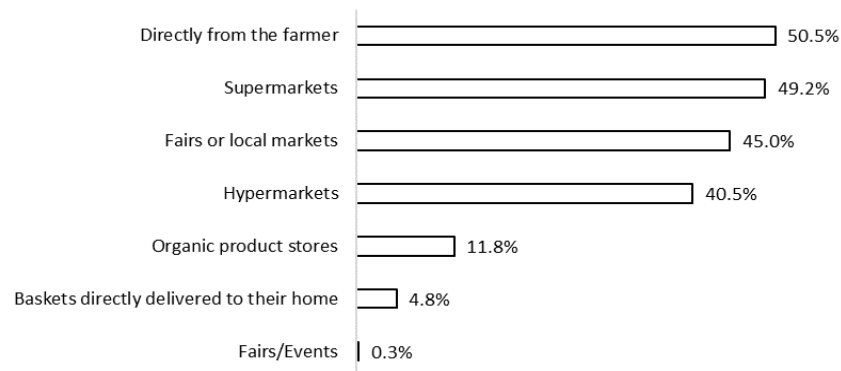


Fig 5. Preferred place to buy organic food products

In order to identify the underlying structure in a set of observed variables, a statistical technique known as the Exploratory Factor Analysis (EFA)

was used to discover the correlation patterns between variables and reduce the dimensionality of the data, grouping correlated variables into common factors (Table 2).

Table 2: Results of the Exploratory Factor Analysis

Dimensions	Item	Chi-square	Communalities	% Variance	Factor loadings
Purchase intention KMO = 0.6 Sig < 0.01 Eigenvalue = 1.691	1	286.28	0.845	84.528	0.919
	2		0.845		0.919
Attitudes KMO = 0.824 Sig. < 0.01 Eigenvalue = 3.216	1	925.590	0.630	64.318	0.794
	2		0.621		0.788
	3		0.671		0.819
	5		0.652		0.807
	6		0.642		0.802
Health awareness KMO = 0.814 Sig. < 0.01 Eigenvalue = 2.980	1	960.613	0.608	74.494	0.780
	2		0.780		0.883
	3		0.811		0.900
	4		0.781		0.884
Environmental concerns KMO = 0.914 Sig. < 0.01 Eigenvalue = 4.333	1	1872.267	0.741	72.218	0.861
	2		0.602		0.776
	3		0.837		0.915
	4		0.841		0.917
	5		0.792		0.890
	6		0.519		0.720
Perceived price KMO = 0.821 Sig < 0.01 Eigenvalue = 2.853	1	765.691	0.704	71.325	0.839
	2		0.740		0.860
	3		0.684		0.827
	4		0.724		0.851

Communalities represent the total variance a variable shares with all other variables included in the analysis (Assis, Sousa & Dias, 2019), with values greater than 0.5 acceptable (Malhotra, 2019). Table 2 shows the items for each dimension after removing the items with communalities below 0.5. Therefore, in the "Attitudes" dimension, the items "I have no interest in buying organic products" and "I do not trust the information contained on the organic product labels" were removed. In the "Health awareness" dimension, the items "Non-organic products are just as healthy as organic products"; "I consider myself a health awareness consumer"; "I choose food carefully to make sure they are healthy," and "I often think about issues related with health" were excluded. Finally, in the "Environmental concerns"

dimension, the items "Producing food products in a conventional way does not damage the environment"; "Organic food production is better for the environment because hormones are used in smaller quantities or are not used at all,"; "Organic farming methods are better for the environment than conventional ones concerning the environment" were removed.

The assessment of the dimensions' internal consistency showed that the values obtained were satisfactory for all dimensions. Effectively, the internal consistency is good, ranging from 0.8 to 0.9 for the "Attitudes" and "Health awareness" dimensions, and very good, recording values above 0.9 for the "Environmental concerns" dimension (Table 3).

Table 3: Characterization and internal consistency of the dimensions

Dimensions	Mean ($\bar{x}$)	Standard deviation (SD)	Internal consistency (Cronbach's Alpha)		Dimensions level
			α	Classification	
Purchase intention	3.87	0.893	0.828	Good	Moderate
Attitudes	3.83	0.812	0.861	Good	Moderate
Health awareness	3.77	0.973	0.885	Good	Moderate
Environmental concerns	4.27	0.754	0.917	Very good	Moderate
Perceived price	3.73	0.949	0.864	Good	Moderate

Legend: from 1 to 3,44: Below moderate; from 3,45 to 4,44: Moderate; from 4,45 to 7: Above moderate

After examining the assumptions of the multilinear regression analysis, namely the absence of extreme values, linearity, and normality, the model shown in Table 4 was estimated. The F statistical test ($F = 137.741$) was statistically significant ($\text{Sig.} = 0.000$), confirming that the estimated model is suitable for describing the associations between the dependent variable "Purchase intention" and the independent variables "Attitudes," "Environmental concerns," "Health awareness," and "Perceived price." Furthermore, the

tolerance values of each variable (> 0.1), as well as the respective VIF values (< 10), once again confirm the model's suitability (Table 4). According to the results, the dependent variable is explained by 57.5% (R^2_{adjusted}) of the independent variables. The variables determining the intention to purchase organic food products are, in decreasing order of priority, "Attitudes," "Environmental concerns," "Health awareness," and "Perceived price." These variables positively affect organic products' "Purchase intention."

Table 4: Estimated regression with organic products' purchase intention as the dependent variable

	Multivariate regression model		Priority
	Coefficients β	Standard deviation	
Attitudes (X_1)	0.799*	0.098	1 st
Environmental concerns (X_2)	0.145*	0.026	2 nd
Health awareness (X_3)	0.806**	0.102	3 rd
Perceived price (X_4)	0.159**	0.080	4 th
Constant	0.097	0.346	-
N = 404; $R^2 = 0.579$; $R^2_{\text{adjusted}} = 0.575$; $F = 137.741$; $\text{Sig.} = 0.000$; Tolerance > 0.1 ; VIF < 10			

* Significant at the 1% significance level.

** Significant at the 5% significance level.

Discussion

The main objective of this research was to determine the impact of sustainable factors on the intention to purchase organic food products in Portugal, namely, environmental concerns of the consumer, consumer attitudes towards organic food products, health awareness of the consumer, and perceived price by consumers.

A quantitative and cross-sectional study was carried out involving 413 consumers. Most were female and single, had higher education qualifications, were employed, and lived in urban communities in a household with 2 or 3 people. The age of the respondents varied from

19 to 67 years old. All respondents were Portuguese nationals and lived in the North of Portugal in the Bragança, Porto, and Vila Real districts.

Regarding the knowledge level about organic food products, the overwhelming majority registered a higher and positive level of knowledge. They also could recognize the EU organic logo. Fresh fruits and vegetables were the most frequently consumed organic products, and the preferred place to purchase them was directly from the farmer, especially among consumers who have a close relationship with the rural community, either because they live in rural communities or because they have family

or acquaintances who are organic food producers. However, for many consumers, particularly those living in urban communities, supermarkets and supermarkets are the most frequently mentioned places for buying organic food products (Cruz, 2011). However, in a study by Radman (2005) involving Croatian consumers, organic food products were mainly purchased in city markets and organic food stores.

The estimated multiple linear regression results indicated that the main reason for purchase

intention was consumer attitudes toward organic food products, followed by environmental concerns, health awareness, and perceived price. Together, these factors positively impacted the intention to purchase organic products and explained 57.5% of the purchase intention of this type of goods.

Based on the results that confirm the positive correlation between the variables, the research hypotheses (H_1 to H_4) formulated in the literature review section were validated (Table 5).

Table 5: Hypotheses validation

Hypotheses	Description	Results
H_1	More favorable consumer attitudes towards organic foods increase the intention to purchase.	Confirmed
H_2	Consumers with greater health awareness are more willing to purchase organic products.	Confirmed
H_3	Consumers who are concerned about the environment try to purchase organic products.	Confirmed
H_4	The perceived price positively impacts the intention to purchase these goods.	Confirmed

Conclusion

This research consists of a quantitative and cross-sectional study that aimed to identify sustainable factors that impact organic products' purchase intention. Considering the results of the multiple linear regression, attitudes, health awareness, environmental concerns, and perceived price positively impacted the intention to purchase organic food products, explaining 57.5% of this variable. Given these results, it can be stated that other equally important factors that were not considered and analyzed in this study may impact the intention to purchase organic food products.

This research has some limitations, mainly related to the methodology adopted. A non-random convenience sample was used, preventing the results from being extrapolated to the Portuguese population because the selected sample may not have the necessary characteristics to ensure the population's representativeness. Proof of this is the

predominance of women in the sample studied, living in the district of Bragança and urban communities. Furthermore, online data collection may have excluded some population groups, particularly the elderly and those living in rural communities, due to limited Internet access and the limited knowledge and/or lack of fundamental skills for using technologies by some consumers.

To overcome these limitations, future research is proposed to use a stratified random sample by district, place of residence, gender, and age. It would also be interesting to develop a longitudinal study, offering samples and/or trials of some organic food products and, at the same time, informing and raising awareness among consumers about the standards inherent to organic production and the economic, social, and environmental advantages associated with choosing organic food products. It is worth noting that, in this research, consumers registered a below-average level of trust among organic product producers. Furthermore, they registered moderate levels of trust in the brand

and believe that organic food products are healthier than conventional products because they are hormone-free. As argued by Mascarello et al. (2024), promoting transparency in the food chain, strengthening consumer confidence, and increasing their awareness about organic food products and the benefits associated with them is essential to generate economic, cultural, and social value for the economic agents involved in production and consumption, ensuring the survival, durability, and sustainability of organic farming.

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