



Perceptions of environmental sustainability and luxury: influences on organic food buying behavior among Millennials and Generation Z in Greece

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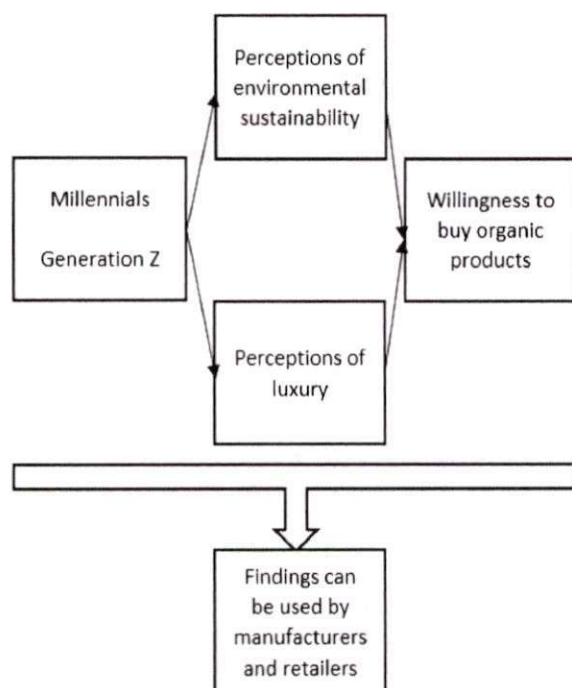
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Received: 16/04/2024, Accepted: 29/05/2024, Available online: 31/05/2024

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<https://doi.org/10.30955/gnj.006067>

Graphical abstract



Abstract

The generational cohorts known as Millennials and Generation Z exhibit distinct behaviors and attitudes, differing significantly from older generations in various aspects including environmental perceptions and purchasing behaviors. Notably, organic foods are sometimes associated with luxury, as highlighted in existing literature. This study aims to explore how Greek Millennial and Gen Z consumers perceive the concept of luxury in relation to organic food products and how their perceptions of environmental sustainability influence both their perceptions and purchasing behaviors. A structured

questionnaire served as the research tool, utilizing the New Environmental Paradigm scale to assess respondents' views on environmental sustainability. The data were analyzed using descriptive and inferential statistics, including tests for mean values, correlation coefficients, and regression models. The findings indicate that consumers' perceptions of environmental sustainability positively impact their willingness to purchase organic foods. Additionally, there are noticeable differences between Millennial and Gen Z consumers in their perceptions of organic foods, and purchasing luxury foods positively correlates with the propensity to buy organic products. The findings of this research can be used by manufacturers and retailers in food sector.

Keywords: organic foods, luxury foods, consumer behavior, perceptions of environmental sustainability, environmental sensitivity, nep scale, millennials, generation Z

1. Introduction

Organic products are often considered luxury items due to several factors that elevate their status beyond mere food choices, aligning them with broader environmental and ethical considerations (Achabou & Dekhili 2013; Nafees *et al.* 2022). Consumers who choose organic products are often driven by environmental and ethical motivations. Organic farming practices are designed to reduce pollution and conserve water and soil quality, which aligns with broader environmental sustainability goals. This ethical dimension adds to the allure and luxury perception of organic products (Ntanos *et al.* 2014).

Moreover, the luxury status of organic products is intrinsically linked to environmental issues through the lens of sustainable consumption. By purchasing organic products, consumers support farming methods that are generally more beneficial for the environment. These methods help in reducing the ecological footprint by

minimizing chemical runoff, improving soil fertility, and promoting biodiversity. Moreover, the premium paid for organic products can be seen as an investment in environmental health, further tying luxury consumption to ecological stewardship (Hammad *et al.* 2019).

Another interrelation between organic products, luxury and environmental issues has to do with the way organic products are marketed, since this way often appeals to consumers' desires for a luxurious lifestyle that also prioritizes sustainability. Brands highlight the exclusivity, ethical sourcing, and environmental benefits of their products, which can enhance their appeal as luxury items. This marketing approach reinforces the idea that consuming organically is not only an ethical and environmental choice but also a sophisticated and socially prestigious one (Henninger *et al.* 2017).

There have been numerous definitions of luxury put forth in recent years. The simplest definition of luxury is that it is something that goes above what is required (De Barnier *et al.* 2012). But this is a contentious matter because what constitutes a luxury, or a necessity depends on a person's individual needs, resources, or opinions. The more than ordinary aspect of a good or service might be introduced as a second dimension. Heine (2012) defines luxury as anything that is desirable and more than necessary and ordinary based on the aforementioned.

Food was once linked to luxury, but in recent years, many exclusive products have become more accessible; however, quality is still an indicator of luxury. Certain food items may be qualified as luxury goods in accordance with accepted definitions of luxury. It can be stated that food products can be categorized as luxury if they satisfy the characteristics of desirable, above necessary, and usual, either in terms of quality or quantity (Hartmann *et al.* 2017; Wiedenroth & Otter 2021).

The generational cohort known as "Millennials", or "Gen Y" has been in the spotlight of scientific interest during the last decades. Millennials are young adults who were born between 1980 and 1994 (Dimock, n.d.). Following Millennials, the next generational cohort is generally known as "Generation Z" or "Gen Z", but, once again, there is no clear scientific definition. Gen Z includes people born between 1995 to 2015 (Windasari *et al.* 2022).

There are distinctions between the attitudes and behaviors of the Millennial and Gen Z age groups. The study of the behavior and beliefs of Millennial and Gen Z generations can help to understand how formative experiences shape peoples' beliefs and behavior (Arnett 2013). These distinctions show that Millennials and Gen Z have developed different relationships with luxury goods and the concept of luxury in general compared to older generations. It is plausible to anticipate that the definition of luxury has changed slightly for Millennials and Gen Z, which will result in variances in how they choose to spend their money on luxury goods (Brand *et al.* 2022).

Firms are very interested in how people perceive luxury in terms of food preferences and sustainability. To develop effective marketing message and promote their brand, it

is essential to comprehend how these ideas relate to one another. Luxury food manufacturers must revise their marketing messages because different generational cohorts react differently and have divergent buying habits (Mishra *et al.* 2023). The technology revolution, which mostly affected Millennials and Gen Zers, has significantly altered how these generations view food, value, and the attributes of luxury. With more tools at their disposal to create associations between their products and notion of luxury, firms are also able to increase customer satisfaction by fostering positive associations with their brands and offering wonderful shopping experiences (Silverstein & Fiske 2003; Uhde 2020).

According to the abovementioned analysis, a research area that is still being explored refers to how younger generations perceive luxury in relation to organic food products and the values of sustainability and eco-friendliness. In the existing literature there is still a small amount of evidence referring to the cases of countries such as Germany and Finland (Hartmann *et al.* 2017; Luomala *et al.* 2020; Wiedenroth & Otter 2021).

Referring to the Greek market, not much is known about how the country's younger generations perceive luxury in terms of organic food products. Positive correlations with organic products and environmental issues have been found in a few pertinent research (Kamenidou *et al.* 2019; Kamenidou *et al.* 2020; Ntanos *et al.* 2014; Skordoulis *et al.* 2013; Tsakiridou *et al.* 2008). However, further investigation and conclusive data are still needed.

These results raise intriguing questions, especially in light of the paucity of research on the Greek market and the generations of Millennials and Gen Z (Armira *et al.* 2016; Rouva *et al.* 2016; Skordoulis *et al.* 2018). Thus, the aim of the present research is to investigate how Greek Millennials and Gen Zers perceive the concept of luxury regarding organic food products, and how their perceptions of environmental sustainability can affect both their perceptions and their purchasing behavior.

There are several papers connecting consumers' environmental attitudes with their willingness to pay for environmental friendly products (Skordoulis *et al.* 2022; Skordoulis *et al.* 2020; Skordoulis *et al.* 2020) including organic ones (Petrescu & Petrescu-Mag 2015). Tsakiridou *et al.* (2008), investigated the attitudes and behavior of Greek consumers towards organic food products. The results showed that environmental issues and health concerns were powerful motivators for the consumers, but only a small proportion of them purchased organic products regularly. Education level and income were found to be motivators as well. In their research Ntanos *et al.* (2014) found that there is a positive correlation between consumers' environmental attitudes and their willingness to buy organic food products. In the same context, Hartikainen *et al.* (2014), found a positive correlation between consumers' attituded towards the environmental and their willingness to pay for organic food products. Vehapi and Mitic (Vehapi & Mitic 2021) explored the main motives and barriers for buying organic and sustainable food in the Generation Z. Their results

showed that the primary motives are products' quality and ability to protect and improve consumers' health. Moreover, they found that the willingness to pay more to buy an organic and sustainable food product is correlated with their consumers' annual income. The results the research conducted by Aprile and Punzo (Aprile & Punzo 2022) are in line with the aforementioned results; however, they found that despite the existing positive correlation between environmental attitudes and organic food products consumption, consumers do not pay high attention to the labels of environmentally sustainable foods.

Based on the above analysis, the following research hypothesis is developed:

H₁: "consumers' perceptions of environmental sustainability positively affect willingness to buy organic foods".

Kapferer and Denizeau (2014) conducted a cross-generational international comparison to explore the sensitivity of Millennials to sustainability issues when purchasing luxury goods. The results showed that Millennials were a vague group, presenting different responses between the youngest and oldest. This result suggests that attitudes tend to shift across age groups. In their research, Kamenidou *et al.* (2019) studied the perceptions of Greek university students belonging to Gen Z towards organic food consumption. They identified two segments; the former segment was based on social norms and ethical behavior while the latter showed a willingness to consider a more environmentally friendly lifestyle.

Thus, the following research hypothesis arise:

H₂: "perceptions of organic foods are different between Millennial and Gen Z consumers".

The consumption of organic food products is considered to be environmentally sustainable since such products have positive environmental impacts (de-Magistris & Gracia 2016). There are researchers, reporting that sustainability is contradictory to luxury (Athwal *et al.* 2019; Kapferer & Michaut-Denizeau 2014). However, there are several others supporting that sustainability can be perceived as a dimension of luxury. Organic and sustainable food products are one aspect of food that may be perceived as luxurious one since more and more consumers shift their emphasis to different dimensions of luxury instead of prestige (Hartmann *et al.* 2017). Davies *et al.* (2012) explored the role of ethics in the consumption of luxury goods. They found that there is a difference in purchasing decisions between luxury and commodity products. Their results proposed the investigation of a possible relationship between the sustainable nature of products and the perception of luxury. In their research, Hartmann *et al.* (2017), examined the dimensions of luxury food, as perceived by German consumers. To do so, they added a dimension named "new luxury" and defined it based on environmental sustainability and authenticity. Based on their results, a significant part of the examined consumers showed a great interest in the value of environmental

sustainability in contrast to traditional luxury values such as prestige, materialism, and price. In general, consumers believe that organic and sustainable food products are more expensive, more difficult to find, and have higher nutritional value as well as more appealing taste, smell, and freshness characteristics (Tsakiridou *et al.* 2008). According to Schleenbecker and Hamm (2013), these traits might, at the very least theoretically, connect organic and sustainable food products with the idea of luxury. Luomala *et al.* (2020), investigated the hypothesis that preferring organic food serves as a status symbol. The research showed that an everyday consumption of organic products is correlated with status signals. In the same context, studies show that, since organic food products are more expensive, favoring them can act as a status signal (Mishra *et al.* 2023).

Based on the above analysis the following research hypothesis arise:

H₃: "buying luxury foods positively affects the buying behavior of consumers towards organic foods".

The paper is structured as follows: the first section includes the introduction and the research hypotheses development, the second section includes the research methodology, the third section includes the research results while the fourth section includes the paper's conclusions and recommendations.

2. Materials and Methods

2.1. Research sample

Greek adults, between the ages of 18 and 41, made up the sample selected for this study. These are commonly referred to as Gen Zers and Millennials, with the former grouping together individuals whose ages range from 18 to 25 and the latter grouping together individuals whose ages range from 25 to 41 at the time this research was conducted.

There are several reasons why this sample was selected. First, it has been noted that Millennials differ from other generations in several ways, including how they behave when making purchases. While Gen Zers differ from generations older than Millennials, little is known about potential differences between Gen Zers and Millennials in Greek consumer behavior. In addition, Gen Zers and Millennials make up the majority of the population who make purchases (Kang *et al.* 2022) and are already one of the largest cohorts in terms of purchasing (ELSTAT 2021). While Gen Zers are currently alternating between adulthood and adolescence, Millennials have already reached adulthood. This indicates that for many years to come, these will be the dominant demographic groups of consumers. Furthermore, the adult, income-earning population typically exhibits purchasing behavior.

Concerning respondents' demographics, age was examined with two options: 18-26 years and 27-41 years. The age ranges are typical of the two generational cohorts, with the exception of individuals under the age of 18. Underage data collecting poses ethical and legal concerns, so it was decided to avoid it. This study investigates aspects of purchasing behavior in the

following sectors of the questionnaire. The Millennial generational cohort is represented by the second option, 27-41 years, which may be more indicative of the total population in Greece due to their wider age range and higher income. The possibility of breaking down the acquired age data into more manageable ranges was examined, but this would not help in better examining the research hypotheses. Gender was included in the question to be inclusive of potential individuals who do not identify as either of the two aforementioned genders. The question about the participants' annual income examines

the yearly income of a group of people in Greece. The examined income groups are representative of diverse Greek average household incomes. Wealthier people are often in a better financial position to acquire luxury goods, such as luxury food items.

The study sample encompassed 397 individuals. This sample is considered as representative of the relevant population based on the existing literature (Saunders *et al.* 2009). The sample demographics appear in Table 1.

Table 1. Sample demographics

		% Percent
Age (years)	18-26	54.0%
	27-41	46.0%
Gender	Male	38.1%
	Female	60.8%
	Other	1.0%
Annual household income (Euros)	0-6,000	24.7%
	6,001-12,000	40.2%
	12,000-20,000	14.4%
	20,000	20.6%
Level of education	High school	27.0%
	Associate degree	11.0%
	Bachelor's degree	41.5%
	MSc / PhD	20.5%

Table 2. Cronbach's alpha values for the questionnaires' sections components

Section	Cronbach's alpha value	Variables in the section
Organic food perceptions and buying behavior	0.818	7
Perceptions of luxury foods features	0.818	8
NEP Scale	0.808	15

It appears that most of the research respondents (68%) were aged between 18 and 26 and were females (60,8%). Regarding the annual household income, one of the four respondents (24.7%) had an income 0 to 6,000, four of the ten respondents (40.2%) had an income €6,000 to €12,000, 14.4% had an income €12,000 to €20,000 and two of the ten (20.6%) had an income higher than €20,000. Last, referring to the level of education of the participants it is obtained that most of them hold a bachelor's degree. However, it should be noted that 27.0% of the respondents hold a high school diploma since they are too young to complete a higher level of studies (Table 2).

2.2. Questionnaire

A structured questionnaire was used as the research tool. In order to find instruments that were similar to it, a thorough review of the pertinent literature was done before it was designed. The questions focused on particular traits chosen by the researchers. In order to collect crucial and pertinent information, the questionnaire's design and the questions it contained were carefully selection. Demographic information including gender, age, income, and spending was also acquired. Most of the questions were developed in a 5-point Likert scale while dichotomous questions were included as well. Finally, 40 questions were included in the questionnaire.

Referring to consumers' perceptions of environmental sustainability they were measured using the New Environmental Paradigm (NEP) scale which is used in several cases of the existing literature (Dunlap *et al.* 2000). The NEP is a widely used scale developed to assess the extent of pro-environmental and ecocentric attitudes among the public. The NEP scale was initially developed by Dunlap and Van Liere and was later revised. Today it is concerned as a well-established instrument that measures environmental attitudes, examining the entire interaction between humans and the environment (Ntanos *et al.* 2019). A high NEP score indicates a strong eco-centric orientation. The scale includes 15 questions categorized in the following dimensions: reality to limits of growth, anti-anthropocentrism, fragility of nature's balance, anti-exceptionalism, and possibility of an eco-crisis (Dunlap *et al.* 2000).

The NEP is particularly useful in research on environmental sustainability as it provides a structured method to quantify attitudes that influence environmental behavior, such as the purchasing of organic foods. By measuring how strongly individuals agree with statements that reflect a belief in the importance of environmental sustainability, researchers can correlate these attitudes with behaviors like purchasing decisions.

The questionnaire was offered to participants online, using Microsoft Forms. This instrument is frequently

employed and offers a productive method for data collection (Naumovska 2017; PrakashYadav & Rai 2017). The questionnaire was distributed starting in September 2022, and data collecting took place due to December 2022.

In order to examine the reliability of the questionnaire, Cronbach’s alpha coefficient is used. Based on the results of the following table, the reliability of the questionnaire is confirmed.

2.3. Data analysis methods

The participants’ replies on a 5-Point Likert scale were analyzed using descriptive and inferential statistics. However, except for the typical descriptive statistics including percentages mean values and standard deviations, an evaluation index is used. This approach is followed since in ordinal variables such as those under consideration, the mean is an indication of the tendency of the responses towards positive or negative opinions and the standard deviation is an indication of the homogeneity of the responses, an approach that is not entirely scientifically acceptable for the quantitative analysis of qualitative variables (Aivazidi & Michalakelis 2023; Lampropoulos *et al.* 2024). To solve this problem, Maravelakis *et al.* (2003), developed among other, the following evaluation index:

$$I = \frac{P_+ + P_n}{P_- + P_n} \tag{1}$$

where P₊ represents the cumulative relative frequency of positive responses, P₋ is the cumulative relative frequency of negative responses and P_n the cumulative relative frequency of neutral responses. Thus, when the value of the index is higher than 1, positive responses are dominant (Maravelakis *et al.* 2003).

Moreover, the inferential statistics included correlation analysis, statistical tests for the mean values and regression analysis. The level of significance of the research at which all the statistical analyses were carried out was set at 5% (Tables 3 to 6).

3. Results and discussion

3.1. Greek millennial and gen z consumers’ perceptions of environmental sustainability

To measure consumers’ perceptions of environmental sustainability, NEP Scale was used. As already mentioned in the research methodology section, the participants replied on a 5-point Likert scale. Thus, both the mean score of NEP Scale which is equal to 3.72 and the results of the following table indicate that the participants on the research are preferably characterized by a pro-NEP attitude and seem to be environmentally sensitive at a medium level. Moreover, the standard deviations reveal a high level of homogeneity in responses.

Table 3. Mean values of NEP Scale’s dimensions

	Mean	Standard deviation
Reality to limits of growth	3.65	1.03
Anti-anthropocentrism	3.93	1.07
Fragility of nature’s balance	3.58	1.03
Anti-exceptionalism	3.69	1.06
Possibility of an eco-crisis	3.79	0.99

Table 4. Mann-Whitney U test to examine differences on perceptions of environmental sustainability between consumers’ generations

	Mean Rank		p-value
	Generation Z	Millennials	
NEP Scale score	25.88	20.87	0.121

Table 5. Spearman’s correlation coefficient results for the relationship between perceptions of environmental sustainability and willingness to buy organic foods

Willingness to buy more organic foods		
NEP Scale score	p-value	0.002**
	Spearman’s rho	0.344

Table 6. Ordinal regression model for the examination of the effect of perceptions of environmental sustainability on consumers’ willingness to buy more organic foods

	Wald chi-square	p-value	Estimate	95% Confidence interval	
				Lower Bound	Upper Bound
NEP Scale score	84.093	0.000	3.646	4.426	2.867
Model fitting	Chi-square		138.368		
	p-value		0.000		
Goodness of fit	Pearson	Chi-square	407.738		
		p-value	0.000		
Pseudo R-Square		Cox & Snell	0.372		
		Nagelkerke	0.417		

To further examine respondents’ perceptions of environmental sustainability based on their age group, a

Mann-Whitney U test was carried out. Based on the results of the following table, there is no statistically

significant difference between the perceptions of environmental sustainability of Generation Z consumers and Millennials, since the test's p-value is higher than the level of significance of the research.

Based on the existing body of literature about the relationship between perceptions of environmental sustainability and organic foods buying intention a correlation analysis between consumers' NEP Scale score and their willingness to buy more organic foods is performed.

The results of Spearman's correlation coefficient indicate a statistically significant positive relationship between the examined variables. Thus, to further analyze this statistically significant correlation, an ordinal regression model will be used. In the following ordinal regression model, willingness to buy more organic foods is the dependent variable, while perceptions of environmental sustainability is the independent one.

Table 7. Descriptive statistics on organic food perceptions and buying behavior.

Variable	% Responses			Mean	Standard deviation	Evaluation index
	Negative	Neutral	Positive			
I know what organic foods are	7,30%	20,00%	72,70%	4.43	0.68	3.39
Organic foods are environmentally sustainable	4,00%	22,20%	73,80%	3.96	0.75	3.66
Organic foods are healthy	8,50%	26,10%	65,40%	3.90	0.99	2.64
I speak positively about organic foods to my family and/ or friends	10.30%	26.10%	63.60%	3.68	0.92	2.46
I am willing to buy more organic foods	10.40%	26.40%	63.20%	3.68	0.93	2.43
Organic foods are expensive	6.80%	16.20%	77.00%	4.19	0.83	4.05
I am willing to pay a higher price in order to buy an organic food	10.9%	52.10%	37.0%	3.31	0.82	1.41

Table 8. Mann-Whitney U test to examine differences on organic food perceptions and buying behavior between consumers' generations.

	Mean Rank		p-value
	Generation Z	Millennials	
I know what organic foods are	24.50	23.69	0.825
Organic foods are environmentally sustainable	26.42	22.50	0.289
Organic foods are healthy	29.17	20.79	0.027*
I speak positively about organic foods to my family and/ or friends	29.08	20.84	0.026*
I am willing to buy more organic foods	18.83	27.21	0.033*
Organic foods are expensive	31.17	19.55	0.003**
I am willing to pay a higher price in order to buy an organic food	26.50	22.45	0.270

Based on the results of the above table, it is obtained that most of the respondents have a very good knowledge of organic foods. The same applies to their perception of environmentally sustainable nature of these products, while most of the respondents consider them as healthy and speak positively about them to their family and friends. The fact that organic foods are expensive takes the highest level of agreement.

Moreover, referring to consumers' buying behavior it is obtained that referring to the willingness to buy more organic foods in the future, positive responses are dominant. The same applies in their willingness to pay more to buy an organic food. However, this response receives the lowest percentage of positive responses.

The above results indicate that perceptions of environmental sustainability have a statistically significant positive effect on consumers' willingness to buy more organic foods. This effect is moderate taking into consideration the values of pseudo R-squared coefficients (Cox and Snell = 0.372; Nagelkerke = 0.417).

Based on the above results, research hypothesis H₁ "consumers' perceptions of environmental sustainability positively affect willingness to buy organic foods", is accepted.

3.2. Perceptions of organic foods

To initially examine consumers' perceptions of organic foods a descriptive analysis is carried. The evaluation index which was presented in the data analysis methods section is also calculated (Tables 7 and 8).

Based on the results of the above table it is obtained that Gen Zers and Millennials have the same perceptions of organic foods referring to their knowledge about them, to their environmentally sustainable nature and to their willingness to pay a higher price in order to buy them. However, four statistically significant differences are indicated. First, Gen Zers, believe that organic foods are healthy at a higher level than Millennials do. Moreover, consumers belonging to Generation Z speak positively about organic foods to their families and friends more than the Millennials. Gen Zers consider organic foods to be expensive at a higher level than Millennials. Last, Millennials are found to be willing to increase the purchase of organic foods.

Based on the above results, research hypothesis H₂ “perceptions of organic foods are different between Millennial and Gen Z consumers”, is partially accepted.

3.3. Perceptions of luxury and organic foods

Consumers were asked to report their views on what attributes luxurious food products usually have.

Consumers consider high price, organic nature and freshness as the three core attributes of luxury foods. Moreover, they express positive opinions on the environmental sustainability of organic foods. On the contrary, they do not seem to consider them either as healthy or as locally sourced (Tables 9 to 11).

Table 9. Descriptive statistics on perceptions of luxury foods features

Variable	% Responses			Mean	Standard deviation	Evaluation index
	Negative	Neutral	Positive			
Fresh	6.20%	22.70%	71.10%	3.94	0.911	3.24
Organic	3.10%	16.50%	80.40%	4.25	0.842	5.87
Expensive	3.10%	9.20%	87.70%	4.54	0.791	7.87
Environmentally sustainable	28.90%	39.10%	32.00%	3.01	0.930	1.04
Beautifully packaged	13.40%	34.00%	52.60%	3.48	0.914	1.82
With nice smell/ texture	14.50%	29.90%	55.60%	3.56	0.979	1.92
Locally sourced	43.00%	35.10%	21.90%	2.73	0.995	0.73
Healthy	28.90%	42.30%	28.80%	3.00	0.979	0.99

Table 10. Food shopping habits

	% Percent	
Weekly food spending (Euros)	0-50	40.2%
	51-100	48.5%
	101+	11.3%
How often do you shop for food?	Less than once a week	16.5%
	Weekly	52.6%
	More than once a week	30.9%
Personal shopping for food	No	19.6%
	Yes	80.4%
Ways for shopping for food ¹	Supermarkets	99.0%
	Local Shops	47.4%
	Delis	6.2%
	Open food markets	23.7%
	Online	16.5%

¹ Multiple response question

Table 11. Mann-Whitney U test to examine differences on organic foods buying frequency

Organic food purchasing frequency	Mean Rank		p-value
	Generation Z	Millennials	
	18.88	27.87	0.011*

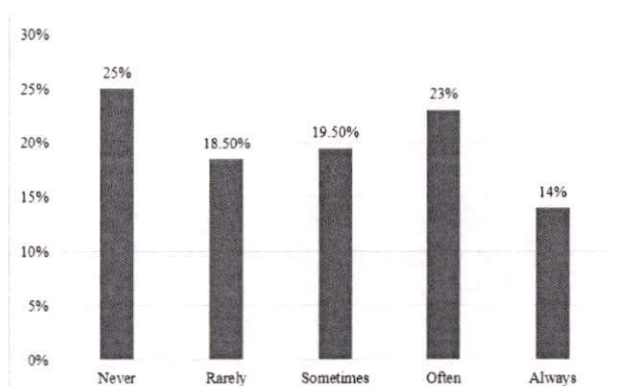


Figure 1. Organic food purchasing frequency

Concerning respondents’ buying behavior of food, four out of ten (40.2%) reported that they spend less than €50 for weekly food, 48.5% of them reported that they spend €50 to €100 and 11.3% more than €101. The trend regarding shopping frequency shows that most of the

participants (52.6%) shop on a weekly basis, while a percentage of 80.4% says they do the shopping on their own. Regarding the location of shopping, supermarkets is the most common answer selected by 99% of the sample. The next most popular choice was local shops, with a percentage equal to 47.4% of the participants, while the less frequently selected shopping spot was delis, which was selected by only 6.2% of the participants (Figure 1).

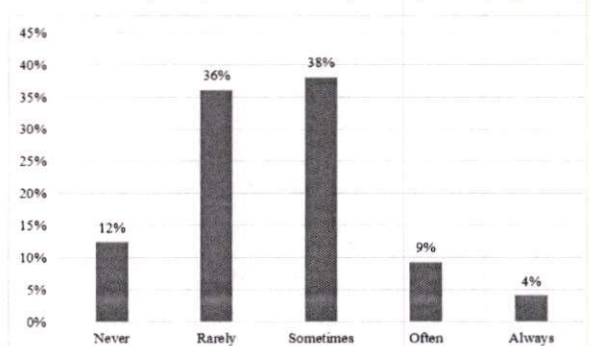


Figure 2. Luxury food purchasing frequency

Moreover, it is revealed that 56.5% of the respondents tend to buy organic products with a certain frequency. However, it is revealed that 43.5% of respondents either buy organic products rarely or do not buy them at all.

The impact of age group on the frequency of organic food purchases is examined using a Mann-Whitney U test.

Based on the results of the following table, a statistically significant difference is recorded, since Millennials tend to buy organic foods with a higher frequency than Gen Zers. This result can be explained by the fact that Gen Zers are currently alternating between adulthood and adolescence, and this can have an impact on both their food selections and their ability to buy more expensive food (Figure 2).

Referring to the frequency of luxury food purchases, it is found that most of the consumers buy luxury foods either rarely or sometimes (Tables 12 to 14).

As in the case of organic food purchasing frequency, the impact of age group on the frequency of luxury food purchases is examined using a Mann-Whitney U test.

The results of the above table indicate that Millennials tend to buy luxury foods with higher frequency than Gen Zers do. This result can be explained in the same way as Millennials higher frequency of organic foods purchase.

In order to examine the relationship between luxury food purchases and organic food purchases, Spearman’s correlation coefficient will be used initially.

Table 12. Mann-Whitney U test to examine differences on luxury foods buying frequency

	Mean Rank		p-value
	Generation Z	Millennials	
Luxury food purchasing frequency	16.41	24.65	0.021*

Table 13. Spearman’s correlation coefficient results for the relationship between perceptions of environmental sustainability and intention to buy organic foods.

Luxury foods purchasing frequency	Organic food purchasing frequency	
	p-value	Spearman’s rho
	0.015*	0.246

Table 14. Ordinal regression model for the examination of the effect of luxury foods purchasing frequency on organic foods purchasing frequency

Luxury foods purchasing frequency	Wald chi-square	p-value	Expected B	95% Confidence interval	
				Lower	Upper
Frequency = 1	15.439	0.000	0.341	0.330	0.384
Frequency = 2	16.928	0.000	0.544	0.507	0.612
Frequency = 3	7.871	0.000	0.619	0.535	0.696
Frequency = 4	3.252	0.000	0.732	0.678	0.824
1					
Model fitting	Chi-square		15.974		
	p-value		0.000		
Goodness of fit	Pearson	Chi-square		10.050	
		p-value		0.000	
Pseudo R-Square	Cox & Snell		0.252		
	Nagelkerke		0.273		

The result of the above analysis confirms the result of Spearman’s correlation coefficient. More specifically, the data of Expected B column of the above table, indicate that as the purchasing frequency of luxury foods rises, the purchasing frequency of organic foods rises as well. For example, for a consumer who purchasing luxury foods sometimes (Frequency = 3), the chances for purchasing organic foods are 0.619 higher, compared to someone who purchases luxury foods rarely (Frequency = 2).

Based on the above results, research hypothesis H₃ “buying luxury foods positively affects the buying behavior of consumers towards organic foods”, is accepted.

4. Conclusions and recommendations

The aim of this research was to investigate how Greek Millennials and Gen Zers perceive the concept of luxury

regarding organic food products, and how their perceptions of environmental sustainability can affect both their perceptions and their purchasing behavior.

Initially, referring to examined consumers’ perceptions of environmental sustainability, it is found that they are environmentally sensitive at a medium level. This result is in line with the relevant body of literature referring to the case of Greece (S. Ntanos *et al.* 2019; Skordoulis, Andreopoulou *et al.* 2022). The level of environmental sensitivity was found to be the same for both the Millennials and Gen Zers.

Moreover, it was found that consumers’ perceptions of environmental sustainability positively affect willingness to buy organic foods. This result is of particular importance since it highlights the role of consumer awareness and attitudes in promoting environmentally

friendly agricultural practices. First, when consumers have a positive perception of environmental sustainability, they are more likely to be aware of the environmental impacts of their consumption choices (Ntanos *et al.* 2014). In food industry, this awareness includes understanding how conventional methods of food production contribute to issues such as soil degradation, water pollution, loss of biodiversity, and climate change due to the extensive use of chemical fertilizers, pesticides, and intensive farming practices (Singh & Singh 2017). Furthermore, with increased environmental awareness, consumers are more inclined to support and prefer sustainable practices (Mazhenova *et al.* 2016). For example, organic farming, which restricts the use of synthetic pesticides and fertilizers, emphasizes crop rotation, animal welfare, and biodiversity, offers an alternative that aligns with these sustainability goals. As consumers recognize these benefits, their willingness to purchase organic products increases, viewing these choices as a means to contribute positively to the environment. It should not be forgotten that an increased willingness to buy organic foods among environmentally conscious consumers drives market demand for such products (Saleki *et al.* 2019). For example, this demand could encourage more farmers to adopt organic practices, which can lead to larger-scale environmental benefits. In such a case, increased organic farming could reduce chemical runoff into rivers and oceans, improve soil health, and decrease carbon emissions.

The research results show that the consumers belonging to Millennials and Gen Zers in Greece, have a good knowledge of organic foods while they consider them as environmentally sustainable and healthy. At the same time, they were found positive to be willing to buy more organic foods in the future. Some of the perceptions of organic foods were found to be different between Millennials and Gen Zers; these differences can be explained by the different status of life of these cohorts.

Referring to the perceptions of luxury foods, it was revealed that eco-friendliness is indeed not the factor most associated with them. The attributes that were found to be most associated with luxury were high price, organic nature and freshness. This result is a clear indication of the significance that freshness, as well as the organoleptic characteristics carry for the perception of luxury in food. Thus, it is obtained that Greek Millennials and Gen Zers do not associate sustainability with luxury when it comes to food, preferring to associate luxury more with characteristics of organic nature and freshness. These findings can explain the fact that a positive correlation between luxury and organic foods purchasing frequency was revealed.

The results of this work revealed that the characteristic of freshness seemed to be of importance for the definition of luxury in food products for this generational cohort. Little is known, however, about why or how freshness is related to luxury, leaving room for further investigation. In addition, differences between the significance of certain attributes on consumers' perception and the current

offerings should be investigated further, in order to better understand the wants, needs and expectations that consumers have from luxury products. Furthermore, while this study concluded that there is no correlation between attitudes towards luxury and purchasing behaviors of consumers, the reasoning behind the existence of this gap still remains unclear, leading to the need for further research.

This research established that there are no differences in the perception of luxury between Millennials and Gen Zers. This is a result reported in the existing literature since there is some evidence to suggest that Millennials and Gen Zers define luxury in a similar way to older generational cohorts as well (Godey *et al.* 2013). It was, however, limited in terms of its sample size, segmentation and representation. With the exclusion of Gen Zers under the age of 18 and the uneven representation of the two generational cohorts, further investigation is required in order to support the validity of the findings of this work. Moreover, Millennials' and Gen Zers' perceptions of other types of foods related to environmental sustainability such as the foods based on alternative proteins and their possible correlation with the perceptions of luxury would add significant value in the existing knowledge of consumers' preferences.

The findings of this research are of particular interest for manufacturers and retailers in the food sector. There is a constant effort to understand factors behind the purchasing behavior of consumers in order to create effective communication messages and increase profits. The results of these findings have highlighted some areas that businesses can focus on in order to achieve said goals. More specifically, the discovery of the importance of freshness for consumers is an area of interest, as marketers should use this finding to create new product lines and new marketing campaigns around the concept of freshness, linking it to a luxurious feel and experience.

Furthermore, the conclusions about the lower importance of packaging might suggest that perhaps manufacturers can cut down on costs, as this characteristic was shown not to have a great effect on consumers' perception.

The borderline correlation of the attribute of eco-friendliness with purchasing behavior suggests that businesses can target their offerings and marketing messaging towards a more environmentally aware audience, which is seemingly more motivated to convert attitudes into purchasing behavior. To do so, firms must become more eco-friendly. This can be achieved by developing environmental innovations strengthening corporate governance on environmental disclosure (Delegkos *et al.* 2022; Kalantonis *et al.* 2014, 2021, 2022). Businesses can corroborate these findings with their own research to draw applicable conclusions that will help achieve marketing and sales targets. In such a case, businesses can communicate to their customers that the luxury perception of organic products is tied not just to their cost or quality, but also to the broader value they offer in terms of environmental preservation and ethical consumption. This adds a significant layer to consumer

choices, as purchasing decisions reflect personal values and a commitment to sustainable living.

The research results, provide several future research directions. First, a research including additional demographic groups such as Generation X and Baby Boomers to explore if and how perceptions and behaviors differ across a broader age range, could provide insights into generational shifts in values and purchasing habits related to organic foods. Performing a longitudinal research to track changes in consumer perceptions and behaviors over time, particularly as environmental issues become more pressing could reveal trends in consumer awareness and the effectiveness of marketing strategies over time. Moreover, given the significant impact of digital platforms on Millennials' and Gen Zers, exploring how social media and influencers affect their perceptions of organic foods as luxury items and their sustainability practices, could provide useful information on understanding this influence which could be crucial for effective marketing. Last, a future research assessing the economic impact of purchasing organic foods on consumers, particularly focusing on price sensitivity and willingness to pay among different income levels within the target demographics could provide insights into the economic feasibility and market potential of organic luxury foods.

Funding

This research was supported and funded by the Special Account for Research Grants of the University of West Attica.

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