

Understanding sustainable purchasing behavior in Romania: Drivers, barriers, and environmental participation

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Abstract. *In recent years, there has been a growing interest in sustainable purchasing behavior as individuals and organizations seek to align their consumption patterns with environmental and social values. To identify the local nuances of sustainable development in Romania, the current study aims to determine the main drivers and barriers to buying organic products. Various statistical techniques such as factor analysis, correlation, and multiple regression are applied to evaluate data collected from 595 urban consumers through an online survey. The responses are used to classify the participants into three different groups according to their ecological perceptions and preferences. Findings revealed a multifaceted landscape of drivers motivating individuals to engage in sustainable purchasing behavior, including attitude, green product knowledge, social influence and health consciousness. Furthermore, it was found that consumer participation in environmental actions is more often motivated by individual and contextual benefits rather than altruistic beliefs and social values. On the contrary, various barriers hindering the adoption of sustainable consumption practices were identified, such as high prices, limited availability, lack of awareness, and conflicting priorities. The impact of socio-demographic factors (age, gender, education and income) is also considered. To the best of the author's information, this article represents one of the first attempts to provide a conceptual framework for the study of organic consumers in Romania and implement value-based segmentation, covering significant research gaps. By synthesizing the diverse array of drivers and barriers, this review provides valuable insights for policymakers, businesses, and researchers seeking to promote sustainable consumption. Across Europe, and particularly in Romania, this matter must receive the utmost priority.*

Keywords: sustainable purchasing behavior, green consumer profile, ecological awareness, green marketing, organic products.

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Introduction

The world is currently facing major transformations and disruptions in everyday life. Citizens' concerns have increased, recycling policies are on the agenda, new legislation regulating plastic production and distribution has been established, retailers have introduced sustainable aisles, and producers are concentrating on new eco-friendly ranges. In this "new normal" context, caring for people and the planet represents an immense opportunity for businesses, that also comes with an enormous threat for inactivity.

Consumers have started to pay serious attention to brands that are actively working to reduce their negative environmental impact.

Clearly, sustainability represents a complex and pressing issue that is becoming increasingly challenging to overlook. The repercussions of our actions, or lack thereof, have long-term, enduring effects, but are we all taking responsibility? Unfortunately, the topic of sustainable development is quite polarized throughout the world, especially when it comes to Europe. Due to fragmented and contrasting cultural values and consumer behavior, no single narrative fits all. Therefore, each market requires a personalized action plan in terms of research, solutions, and resources.

Although the debates around sustainability and consumption have gained ground on the public agenda within the past decade, the local scientific literature did not extensively investigate sustainable behavior and the factors that might affect purchasing habits (Dabija et al., 2018). Observing the major shifts occurring at consumer level, environmental literature in Romania needs improvement in terms of depth of investigation, as well as the number of available studies. Shopper behavior has transformed in many ways since the outbreak of Covid-19 and continues to evolve in the wake of spiraling energy, fuel and food costs; therefore, conducting consumer studies is essential.

In order to bridge significant knowledge gaps, the main purpose of the current study is to analyze the drivers and obstacles to sustainable purchasing behavior for Romanian consumers. It is the right time to talk about sustainability, a topic that deserves to be kept on the agenda, despite other topics that might appear more pressing. The key variables discussed are level of environmental importance, individual participation in eco-friendly behaviors, and main motivations and barriers to sustainable purchasing behavior. Moreover, the data obtained is used to group respondents into three different clusters of sustainability enthusiasts: actives, considerers, and dismissers.

The content of the paper is structured as follows. It starts by properly analyzing the relevant scientific literature, grasping the essential takeaways from international and national studies. This section emphasizes current trends in sustainable development, exploring the topic through three different lenses: companies, consumers, and products. Following that, it continues by delivering the study objectives and describing the methodology. An online questionnaire is the instrument used to reach the target population. Key results are then presented and compared in various contexts, alongside tables and figures to illustrate the most relevant findings. The variables analyzed are diverse in order to be clear on both opportunities and challenges. Finally, conclusions are drawn, coupled with future research areas and recommendations for marketing practitioners.

Literature review

The current section starts with an overview on the evolution and development of sustainable marketing, observing current trends from a business perspective. Following that, it seeks a more focused exploration, discussing the characteristics of green consumers and the state of the organic market.

The evolution and development of sustainable marketing

More than five decades ago, researchers and marketing practitioners started to question the impact and role of marketing in society. Therefore, marketing was accused of failing to solve social and economic problems and promoting irresponsible consumption practices

(Fisk, 1973). As a result, a new business practice addressing environmental issues emerged. During its development, this field received various names in the literature, specifically ecological marketing, green marketing, environmental marketing and, more recently, sustainable marketing. Considered the final stage of ecological marketing, sustainable marketing reflects the three objectives of sustainable development: environmental integrity, social equity, and economic prosperity (Ruggerio, 2021). Therefore, with a triple mission dedicated to caring for people, profits and the planet, marketing becomes a potential savior, after being long criticized and blamed for current environmental issues and the consumerism culture.

Over time, green marketing evolved from a simple promotional tool to a strategy affecting the whole company, from concentrating on specific environmental issues to global sustainable goals, and from a limited number of industries and products to the entire market (Dangelico & Vocalelli, 2017). Businesses have showcased their social responsibility through various forms, for example, repositioning existing products without changing their composition, improving them to be less harmful to the environment, including environmental issues in the company's culture or developing new brands targeting solely green consumers.

It is now believed that sustainable marketing can contribute to solving environmental problems and promoting healthy behavior among citizens through responsible business activities. If in the past consumers were perceived to choose products based on functional (Marketing 1.0) and emotional (Marketing 2.0) attributes, nowadays a third dimension has gained ground, namely Marketing 3.0, a concept which illustrates the fact that most consumers also act according to the level of social responsibility of companies (Kotler, 2011). Multiple studies have confirmed that, through corporate social responsibility actions, firms can differentiate themselves from the competition and access new consumer segments, as shoppers are increasingly attracted to purchase products from such companies (Martins et al., 2022).

At the same time, several authors continue to highlight that companies that chase profits and economic growth are making sustainability impossible, which is in contradiction with the plans for fighting climate change. For example, in the literature dedicated to corporate sustainability, different concepts have emerged to highlight the false green marketing strategies of companies. Terms such as greenwashing or bluewashing are used by specialists to describe an organization's deceptive commitment to social or ecological causes (Stoeckl & Luedicke, 2015). Green talking is another popular concept, which describes firms that use environmental protection as a promotional strategy without real action (Magnier & Schoormans, 2015). Like greenwashing and bluewashing, green talking has a negative effect on people's trust in corporate sustainability initiatives.

It is worth mentioning that the direction, speed and depth of sustainable development rely on several factors, varying by country. As far as Romania is concerned, the main challenges faced are the modest evolution of organic sales compared to other European countries, the low share of organic production, the imbalance between imports and exports, obsolete farming practices as well as the absence of regular collection of statistical information. According to Zamfir et al. (2017), Romania is one of the few countries in the EU with a very discouraging framework on the adoption of circular economy activities, being a step behind in the implementation of environmental protection measures.

Sustainable purchasing behavior – Consumers' perspective

Consumers who care about the environment, also called ecological or green consumers, represent an essential component of green marketing, as their purchasing and consumption decisions can contribute to saving the environment. Therefore, they play a decisive role in the sustainable development of society. According to White et al. (2019), people concerned about the environment can be identified through the green actions or practices they engage in, for example, reducing consumption, recycling products, or purchasing second-hand items.

Consumer behavior is a very complex and diverse process, being influenced by a wide range of demographic, cultural, social, and psychological factors which shape buying and consumption decisions every day. When choosing to engage in a pro-environmental activity, consumers may be motivated either by altruistic values, related to protection of nature and animals and rejecting overconsumption, or by selfish values, for example personal health, financial security, individual wellbeing, or the desire to consume higher quality products (Achabou & Dekhili, 2013). Therefore, researchers have confirmed that there are numerous factors which influence sustainable behavior, for example cultural values and social context, attitude and level of knowledge, concern for the environment, socio-demographic characteristics and product attributes (Sun et al., 2021; Dima et al., 2022). Psychological variables are also shown to provide more relevant and specific information about consumers' environmental behavior compared to socio-demographic factors (Yener et al., 2023).

To add more, marketers believe that there are a number of situational factors, specific to the moment of purchase and the marketing mix, that can stimulate or hinder green consumer behavior. For example, if recycling containers are not easily accessible, recycling becomes difficult to carry out (Barr et al., 2013). The most important situational factors mentioned in the literature are economic constraints, product availability, and store characteristics. It is also true that people behave differently depending on the circumstances, which is why actions sometimes contradict stated beliefs and intentions.

For European citizens, sustainability is increasing in importance, but it is only one of the many things impacting day-to-day behavioral choices. According to the most recent Eurobarometer report, inflation and rising prices have been identified as the primary concern among Europeans today (European Commission, 2023). The second main concern faced at the personal level is the economic situation, while the state of the environment and the climate change crisis are ranked third in importance, climbing one position versus previous edition.

These trends reflect the dual nature of the modern consumer, worrying about financial stability, but also about the environment. Due to rising commodity prices, rational shopping behavior is intensifying, yet consumers crave social responsibility, buying from brands and businesses that take action to improve the environment and society. It is believed that social responsibility is a characteristic of the contemporary consumer (Singh et al., 2011). In conclusion, the industry needs to adapt to this unique environment which is, of course, developing at different speeds across Europe. Companies must start demonstrating both functional and ecological advantages, as concerns over economic situation and the environment will dominate next period.

Sustainable purchasing behavior – Products' perspective

According to experts, there are several attributes that make a product environmentally friendly, for example, ingredients, production process or packaging. Peattie (1995) stated

that a product is environmentally friendly when its environmental performance, from production, use, and disposal, is significantly improved compared to the existing supply of conventional or competitive products. Similarly, Ottman et al. (2006) pointed out that, although there is no product 100% harmless to the environment, sustainable products are those which limit the use of natural resources, energy, and toxic agents.

When the first ecological products appeared on the market, they were considered inferior to conventional ones. For example, the consumer perception of environmentally friendly cleaning agents in the 1960s and 1970s was that “they cost twice as much to remove half the grime” (Ottman et al., 2006, p. 29). Since the early 2000s, many of the emerging green products improved because of more advanced technologies, tougher state penalties, attractive environmental laws and incentives, and public pressure. But although current organic products are as efficient as non-organic ones, this skepticism about the quality of environmentally friendly alternatives persists in the minds of consumers. Grant (2007) describes in his book the phenomenon of greenophobia, defined as people's belief that ecological products are too expensive, of poor quality, and suitable only for certain consumer segments.

Recently, the number of studies analyzing the opinions of consumers about the ecological characteristics of products has increased. In this sense, Luchs et al. (2010) confirmed that the impact of ecological criteria on quality perceptions depends on the product type. For example, the organic qualities of a product are positively evaluated when it comes to purchases where people appreciate the delicacy and gentleness of the formula, such as baby shampoo. On the other hand, sustainability features can have a negative impact on consumer perception for product categories where formula strength and efficiency is more valued, for example laundry detergents, car tires, and hand sanitizers. A similar view is supported by van Doorn and Verhoef (2011). In their paper, the authors differentiate the impact of ecological criteria on consumer attitudes between vice- and virtue-foods. The study results unveiled that organic claims can have a negative effect on vice foods, such as chocolate cake, as they reduce the level of enjoyment and pleasure associated with this type of products.

Even if the term ecological behavior has several meanings, purchasing and consuming green products remains the most widespread and studied category. Understanding this type of behavior is very important, because once people began to realize the importance of protecting the environment, they did not reduce their consumption but instead turned to more environmentally friendly alternatives. Thus, another relevant problem that arises is that people can end up buying too much organic products, creating a rebound effect, with negative consequences on the environment (Dangelico & Vocalleli, 2017). Excessive buying, whether it is organic or non-organic products, harms nature. In order to ensure the transition to a global sustainable nation, it is necessary to increase production efficiency, but also reduce demand.

When it comes to organic products, consumption frequency and determining factors vary by country, depending on standard of living, culture and eating habits, level of environmental knowledge, split between rural and urban population, as well as availability (Nagy & Dabija, 2020). At local level, the green market is still developing, with immense growth potential, considering land available and technological advancements in place. Local consumer studies emphasize that even if Romanians want to protect the environment, the

high price of organic products, limited supply and lack of information about environmental issues prevent them from behave in a sustainable way (Petrescu et al., 2017).

To conclude, the findings presented in this section highlight that the process of sustainable purchasing behavior requires a country-based focus. Conducting such research is essential, as Romania has gone through significant social, economic, and political changes which resulted in unique scales and patterns of consumption.

Research methodology

The worldwide rise of consumers interested in sustainability and environmental protection is what drives sustainable development forward. But because predicting ecological behavior is such a complex process, based on a multitude of motives, it requires constant and updated investigation from various angles and in different markets. Therefore, the key role of the current research is to recognize the main characteristics of people who buy and consume organic products in Romania. The key variables discussed are level of environmental importance, individual participation in eco-friendly behaviors, and main motivations and barriers to sustainable purchasing behavior.

With the aim of achieving the research objective, a quantitative study was employed. Data from 595 adults was collected using a self-administered online survey, available on LimeSurvey platform. Descriptive statistics were used in SPSS to characterize the sample investigated, while the scale validity was measured with Cronbach's alpha. Following that, various statistical techniques such as factor analysis, correlation, and multiple regression were applied to test the research hypotheses. Data collection took place over a four-month period in 2022, between September and December. The average time to complete the questionnaire was approximately 15 minutes. To increase response rate, the questionnaire was promoted on the researcher's social networks (Facebook, LinkedIn, and Instagram) and via email.

Considering the exploratory nature of the research, the limited budget available and time restrictions, a random sampling method was implemented to reach the target audience. Convenience sampling is frequently used by researchers, even in the case of large samples. David and Sutton (2011) explain that this method is an appropriate option when the study population is unknown or the researcher is investigating new ideas, concepts, or hypotheses.

The population from which the sample was drawn is made up of the Romanian urban population, male and female, aged 18 years old and above, to whom the researcher has access and who have heard of organic products before. Urban citizens are chosen for the present study because these consumers are crucial to bringing about the desired change in society, especially when it comes to consumption habits. Representing more than half of the total Romanian population, with easy access to information and quality education, they exhibit a growing awareness and concern for health and sustainability issues. In addition, urban consumers are the main consumers of organic products in Romania, as in rural areas the trend toward self-sufficiency is still very prominent (Nagy & Dabija, 2020).

In order to determine the optimal sample size, both statistical formulas and qualitative aspects were reviewed. Statistical techniques were the first used to calculate sample size, which involved the application of Cochran (1963) and Yamane (1967)'s formulas. By applying a 5% margin of error and a 95% confidence interval, the ideal sample size for the present research varies between 384 and 400 respondents. Qualitative factors were also considered, including research type, number of variables studied, financial and

time resources, as well as the sample size in previous studies addressing a similar research topic. However, these tools were used for indicative purpose only, considering that sample representativeness is established by the sampling method, not by the number of respondents reached.

A total of 29 questions, divided into three sections, were included in the questionnaire. Most questions are closed-ended, in multiple choice format, allowing survey participants to choose one or more answers from a predefined list. The first section contains warm-up questions, which aim to familiarize the respondents with the research topic. This part measures the level of environmental importance, as well as individual participation in eco-friendly behaviors. The second section is dedicated to motivations and barriers to purchase, while the final section is built to test the research hypotheses and measure the variables of the model. The items developed for each individual variable are adapted from previous studies and are measured on a seven-point Likert scale (1 = "Strongly Disagree", 7 = "Strongly Agree"), being previously validated by researchers. The survey structure and format were pilot-tested in order to identify and correct possible weak points. All questions are dedicated to organic food because of its popularity in the literature and in media.

To move away from studies focusing solely on secondary data or more traditional, demographic segmentation approaches, the present paper also seeks to deliver value-based segmentation. Therefore, a two-step segmentation task was applied to divide respondents into different groups of organic consumers, based on reported behavior, attitudes and socio-demographic characteristics. With the help of hierarchical clustering technique and k-means cluster analysis, three different groups were created.

Conceptual framework and study hypotheses

The dearth of adequate consumer studies and the scarcity of local research regarding the impact of psychological factors on sustainable purchasing act as motivators for the present paper. For example, the most recent statistics on the organic market in Romania date back to 2016, with many notable events impacting consumer behavior since then (Willer et al., 2022). Therefore, it remains unclear what are the determining factors of sustainable behavior or how the sales of green products have evolved in the country.

The literature search revealed that there are numerous factors which can influence sustainable behavior. For the present research, only those variables were chosen which, according to scientific data, have a considerable impact on buying organic products: attitude - how people feel (van Doorn & Verhoef, 2011), green product knowledge - what they know (Barr et al., 2013), social influence - the impact of others (Liobikiene et al., 2016) and health consciousness - personal health protection (Kushwah et al., 2019).

Therefore, in order to cover the gap mentioned earlier and identify the factors which drive sustainable purchasing behavior in Romania, the following research questions are proposed:

How does attitude affect sustainable purchasing behavior of urban consumers in Romania?

How does green product knowledge affect sustainable purchasing behavior of urban consumers in Romania?

How does social influence affect the sustainable purchasing behavior of urban consumers in Romania?

How does health consciousness affect sustainable purchasing behavior of urban consumers in Romania?

How do socio-demographic features affect sustainable purchasing behavior of urban consumers in Romania?

In line with the questions above, four hypotheses are put forward:

H₁. Attitude has a positive and direct effect on sustainable purchasing behavior.

H₂. Green product knowledge has a positive and direct effect on sustainable purchasing behavior.

H₃. Social influence has a positive and direct effect on sustainable purchasing behavior.

H₄. Health consciousness has a positive and direct effect on sustainable purchasing behavior.

The theoretical model recommended in the current paper for measuring sustainable purchasing behavior can be found in Figure 1.

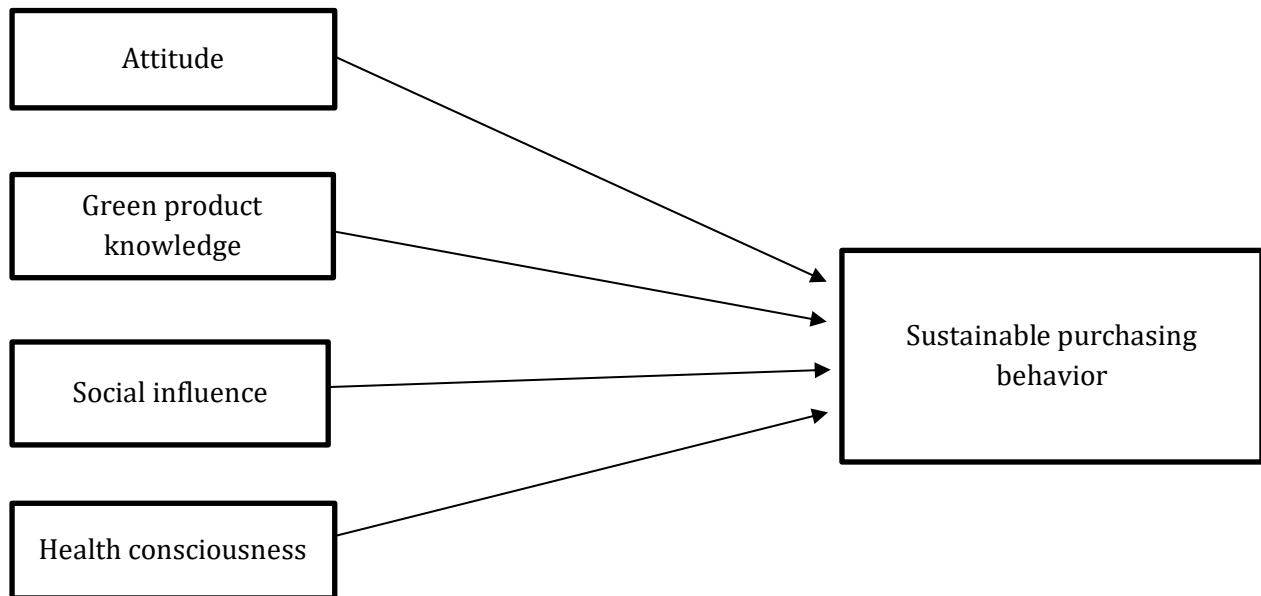


Figure 1. The theoretical model

Source: Author's own research results/contribution.

As illustrated in the model, the antecedents of green behavior are considered to be attitude, green product knowledge, social influence and health consciousness. The dependent variable of the research is sustainable purchasing behavior, buying goods with social, economic, and eco-friendly characteristics. It is important to mention that these variables are also examined through socio-demographic factors (age, gender, education and income). Because results remain contradictory when it comes to studying demographics as predictors, in the current study they are not part of the model but analyzed as control variables.

Results

Demographic information of the sample

Table 1 reports the demographic information of the survey participants.

Table 1. Sample's demographic data (N = 595)

Demographics	Count	Percentage
<i>Gender</i>		
Male	209	35.1
Female	386	64.9
<i>Age (years old)</i>		
18 - 25	225	37.8
26 - 35	188	31.6
36 - 45	65	10.9
46 - 55	96	16.1
> 56	21	3.5
<i>Married</i>		
Yes	243	40.8
No	352	59.2
<i>Children</i>		
Yes	199	33.4
No	396	66.6
<i>Monthly income (lei)</i>		
< 1500	107	18.0
1501 - 3000	112	18.8
3001 - 4500	120	20.2
4501- 6000	116	19.5
6001 - 7500	50	8.4
7501 - 10000	47	7.9
> 10000	43	7.2
<i>Education level</i>		
High school or below	144	24.2
Bachelor's degree	287	48.2
Professional diploma	7	1.2
Master's degree or above	157	26.4
<i>Employment status</i>		
Student	153	25.7
Working	423	71.1
Not working	15	2.5
Retired	4	0.7

Source: Author's own research.

As data analysis revealed, the average respondent completed university studies (either a bachelor's or a master's degree), has a medium to high income and no children, is not married and belongs to the young adulthood cohort. Around 40% of all survey participants are between 18 and 25 years old. Of the total sample, 386 respondents are women and the rest of 209 are men. Regarding employment status, the majority is working (71.1%). Average income level falls in the range 1501 - 6000 lei. Considering the method used for collecting data, it could be argued that the sample characteristics align with the population demographics. Urban consumers encompass individuals from a diverse range of demographic backgrounds, including different age categories, income levels, educational background, and household compositions.

Environmental importance and participation in eco-friendly behaviors

The current section investigates environmental importance and personal actions taken to protect the environment. In order to understand the role that sustainability plays in

Romanians' lives, respondents were asked to rate how important is environmental protection for them personally on a five-point semantic differential scale (1 = "Unimportant", 5 = "Very important"). For more than 75% of the respondents protecting the environment is important, thus 38.0% consider it "fairly important" and 37.1% "very important". No answer was recorded for the option "unimportant". This variable obtained a mean score above 4.00 ($M = 4.11$, $SD = 0.81$), therefore it can be argued that the environment represents an important concern for the majority of Romanian consumers, a finding in line with previous studies (Dabija et al., 2018).

Regarding individual participation in pro-environmental behaviors, about 7 in 10 respondents declared they have taken action to combat environmental problems in the last six months (73.1%). To find out more about this subject, participants were given a list of 11 sustainable actions and had to pick which ones they had taken so far. The distribution of responses can be found in Table 2.

Table 2. Individual participation in pro-environmental behaviors (N = 435)

Actions	Count	Percentage
Use eco-friendly ways of transportation	194	44.6
Reduce plastic waste	265	60.9
Recycle	297	68.3
Cut water use	159	36.6
Cut energy use	200	46.0
Buy sustainable products	163	37.5
Buy local products	215	49.4
Start eating healthy	126	29.0
Debate over environmental issues with other people	162	37.2
Buy second-hand goods	139	32.0
Repair an item instead of replacing it	198	45.5

Source: Author's own research.

It can be seen from the data in Table 2 that the most popular sustainable behaviors are recycling (68.3%), reducing plastic waste (60.9%) and purchasing local products (49.4%). The least common activities are eating healthy (29.0%), buying second-hand products (32.0%) and cutting water use (36.6%). Interestingly, less than 40% of the respondents have purchased sustainable products for ecological reasons in the last six months. To compare, it can be stated that the Romanians surveyed are twice more willing to recycle than to take care of their diet.

To provide a more thorough investigation, the actions presented were divided into three different categories based on the stage of the consumption process, following the model suggested by Zhao et al. (2014). The three categories are purchasing, using, and recycling. Only behaviors which fit these categories were grouped, that is, eight of the activities presented. Thus, purchasing behavior includes the three actions relating to sustainable, local, and second-hand goods. Using behavior refers to the consumption of water, energy, plastic, and eco-friendly ways of transportation. And the third group consists of a single activity, namely recycling. According to Zhao et al. (2014), intrinsic motivations vary by type of activity. For example, although purchasing green products can involve additional costs for the consumer, recycling is more often seen as a personal choice, which can bring financial rewards.

The frequencies resulting from the activities mentioned above highlight that recycling is the most popular among respondents (68.3%), while purchasing is the least mentioned (39.6%). This finding shows that consumers are more interested in activities which bring tangible economic advantages, whether that are financial rewards for recycling or cost cutting through energy and water conservation. The general literature asserts that sustainable behaviors and attitudes tend to be motivated by personal interests rather than environmental attitudes, beliefs and values, supporting the idea of “the tragedy of the commons” (Liu et. al., 2009). For example, consumers might engage in such activities for their own health and safety, not necessarily to protect the environment.

Next, for a better understanding of responses, the number of actions picked by respondents was divided into three groups: “few actions” for 1 - 3 options, “some actions” for 4 - 7 options and “many actions” for 8 - 11 options. The results are shown in Figure 2.

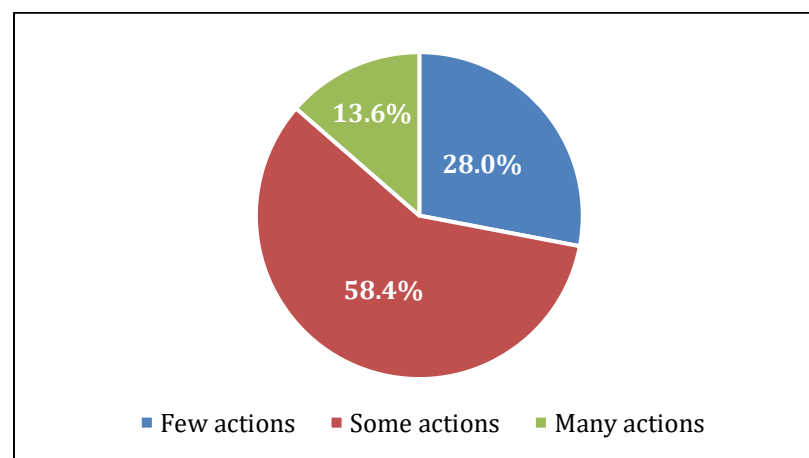


Figure 2. Number of actions taken to protect the environment

Source: Author's own research results/contribution.

The figure above reveals that almost 60% of respondents carried out between four and seven green activities, while about 1 in 10 undertook at least eight activities for sustainability reasons. The number of respondents who picked few activities is double the number of those who conducted many activities. Only two participants selected the 11 actions presented. The majority chose five actions, almost 15% of the total responses collected.

Drivers and barriers to sustainable purchasing behavior

In the next section of the questionnaire, respondents were required to provide information on how they perceive organic food products, discussing both drivers and barriers to sustainable purchasing behavior.

First, participants were asked to indicate what are the most important attributes when purchasing green food on a 5-point scale, where 1 equals “Unimportant” and 5 equals “Very important”. The mean score for each attribute is illustrated in Figure 3.

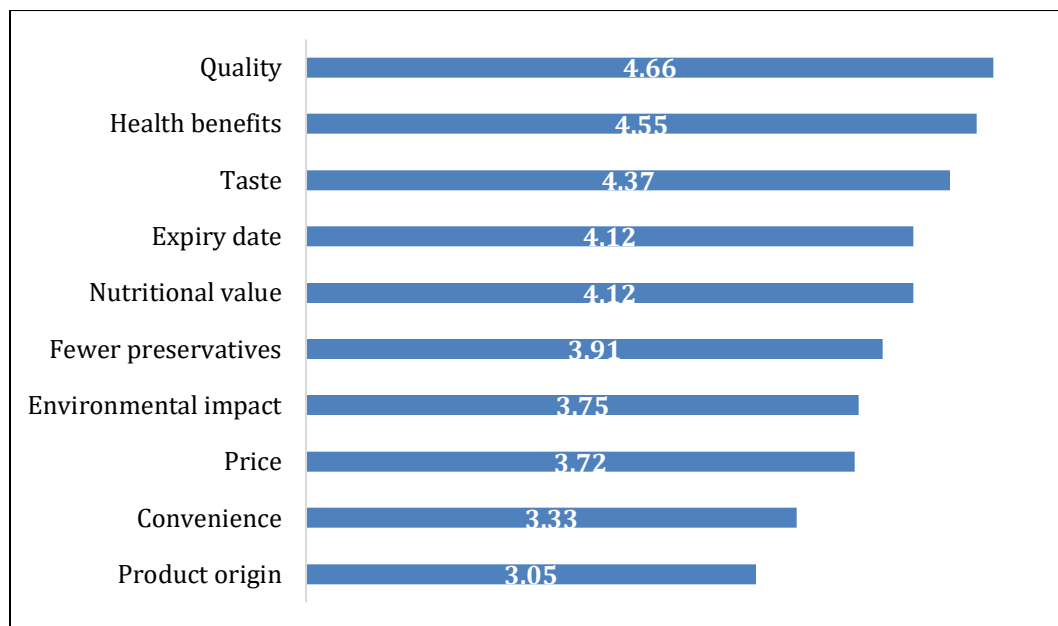


Figure 3. Most important attributes when purchasing sustainable food (N = 557)

Source: Author's own research results/contribution.

The highest mean values were recorded for product quality ($M = 4.66$, $SD = 0.59$), health benefits ($M = 4.55$, $SD = 0.65$) and taste ($M = 4.37$, $SD = 0.74$). Environmental impact is less important to consumers, obtaining a score below 4.00 ($M = 3.75$, $SD = 0.93$). Price ($M = 3.72$, $SD = 0.88$), convenience ($M = 3.33$, $SD = 1.11$) and product origin ($M = 3.05$, $SD = 1.21$) were ranked lowest in terms of importance, however, still managed to reach mean values above the midpoint of the scale.

These results indicate that sensory and quality attributes together with health benefits represent essential factors in the purchase of organic food for the sample. For instance, quality was ranked, on average, first in importance by all respondents, regardless of age, gender, or income level. These findings are consistent with those observed in earlier studies. In his research, Bryła (2016) revealed that Polish consumers choose to buy organic fruits and vegetables mainly because they are tastier and have better quality and significant naturalness. Similarly, Kushwah et al. (2019) confirmed that the functional characteristics of products represent the main motives for organic food choice. Thus, very few consumers are willing to compromise on taste or quality, just to consume a product less harmful to the environment, which is also more expensive. Product performance is so important to most consumers that sustainability qualities cannot guarantee the purchase. In his paper published in 1993, Davis (1993, p. 29) declared that “consumers do not yet appear to be ready to base product purchase decisions primarily or exclusively on the basis of environmental attributes”. It could be argued that this statement is still valid today, as demonstrated by the research findings.

Next, in Figure 4, the main barriers that prevent respondents from purchasing organic food are summarized.

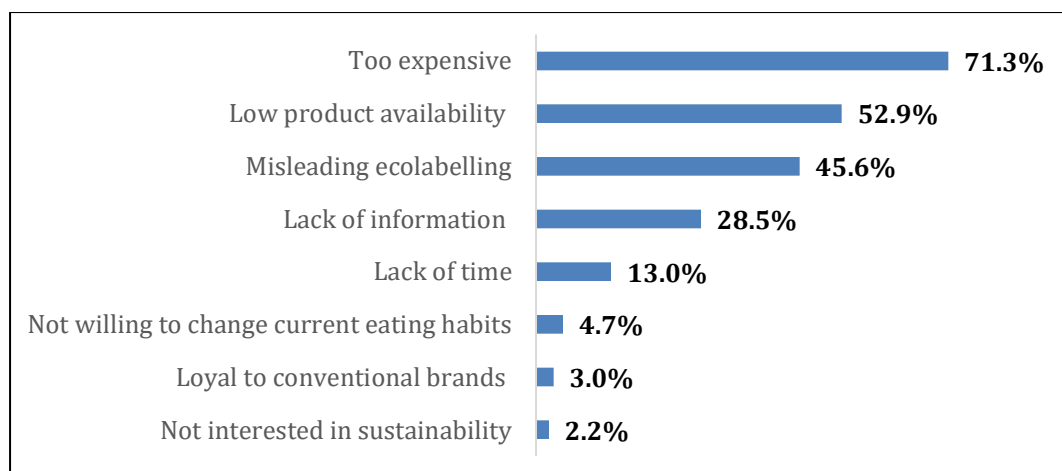


Figure 4. Main barriers to sustainable purchasing behavior (N = 592)

Source: Author's own research results/contribution.

Data analysis revealed that the higher prices of ecological products represent the most mentioned barrier. Around 1 in 7 respondents picked this answer, with a percentage of 71.3. Lack of availability was selected by more than half of the sample (52.9%), followed by unclear labelling (45.6%) and lack of information (28.5%). At the other end of the scale, the least mentioned answers were "Not willing to change current eating habits" (4.7%), "Loyal to conventional products" (3.0%) and "Not interested in sustainability" (2.2%).

This view is supported by findings from other Romanian studies, which demonstrated that price and low availability are the most important barriers to green purchasing behavior (Petrescu et al., 2017). Although poverty rate in Romania registered a slight decrease in 2021, as reported by the National Institute of Statistics (2022), price is still considered a major decision factor in consumer behavior and is expected to remain just as important in today's post-pandemic climate. Wang et al. (2019) presented a distinct perspective, arguing that there is a direct correlation between price and perceived healthfulness of organic products, therefore consumers tend to associate lower prices with reduced quality and fewer benefits.

In addition to the price barrier, the lack of information and education on ecology and the importance of green products is another challenge that must be solved to ensure the success of sustainable marketing in Romania. It is important to understand that these two barriers are interconnected, so solving one will lead to fixing the other. Due to the fact that Romanians do not have enough knowledge about environmental issues or green products, they do not realize the importance of these products for the environment, nor do they understand why green production comes with higher costs. Therefore, their capacity to respond positively to sustainable development initiatives is limited.

Model evaluation and hypotheses testing

As a preliminary step before bivariate analysis and hypotheses testing, the measurement model was evaluated in terms of reliability and validity. Assessing these two aspects can influence the quality of the data obtained. First, an internal consistency analysis was used to calculate the reliability of the measurement scales. Second, to ensure construct validity, to ensure precisely that each scale measures what is intended to measure, both related (convergent validity) and unrelated connections (discriminant validity) between variables were explored.

Values for Bartlett's test of sphericity ($p < 0.001$) and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (global coefficient 0.80) have both exceeded the acceptable minimum requirements, highlighting the factorability of the data. The results of the exploratory factor analysis are presented in Table 3.

Table 3. Results of factor analysis

Construct	Items	Cronbach Alpha	Factor loadings	Composite Reliability	AVE
Attitude	A1. It is important for me that I buy green products.	0.92	0.80	0.84	0.61
	A2. I enjoy buying green products.		0.72		
	A3. I think sustainability is important.		0.81		
	A4. I pay attention to my personal environmental footprint.		0.83		
Green product knowledge	GPK1. I know a lot about green products.	0.93	0.75	0.86	0.63
	GPK2. I can easily identify green products in the store.		0.76		
	GPK3. I am aware about the qualities of green products.		0.80		
	GPK4. I know how to differentiate between green and non-green products.		0.72		
Social influence	SI1. I feel pressure from society to purchase green products.	0.89	0.76	0.82	0.57
	SI2. My family and friends encourage me to buy green products.		0.76		
	SI3. Most people I know think it is important to buy green products.		0.81		
Health consciousness	HC1. Maintaining good health is a top priority for me.	0.80	0.71	0.80	0.55
	HC2. I understand the importance of a balanced diet for maintaining good health.		0.72		
	HC3. I prefer to buy organic products for their health advantages.		0.78		
Sustainable purchasing behavior	SPB1. Purchasing products that are environmentally friendly is a priority for me.	0.89	0.81	0.86	0.60
	SPB2. I do not mind paying a higher price for green products.		0.80		
	SPB3. I consider the environmental impact of the product when deciding what to buy.		0.82		

Source: Author's own research.

The values presented in the table above demonstrate the convergent validity of the recommended model, as per Hair et al. (2019)'s guidelines. First, the coefficients for Cronbach's alpha range between 0.80 and 0.93, confirming the internal consistency of the instruments. Second of all, both factor loadings and composite reliability (CR) data for all scales exceed the recommended minimum threshold of 0.70. Third of all, the average variance extracted (AVE) of each construct is above the acceptable value of 0.50, ranging from 0.55 to 0.63, signaling that the scales are reliable. In addition, the square root of AVE proved to exceed the correlation values between the constructs, establishing discriminant validity.

Lastly, no correlations above 0.80 were identified between independent variables, a result which allows us to confirm no violation of multicollinearity assumption. The preliminary tests summarized above highlight an acceptable fit of the instruments proposed.

Next, Spearman correlation was run to test the relationship between the constructs of the model and the main socio-demographic characteristics of the sample. The correlation matrix is presented in Table 4.

Table 4. Correlation matrix between constructs and socio-demographic characteristics

Constructs	Age	Education	Income
Attitude	0.43**	0.26**	0.32**
Green product knowledge	0.51**	0.34**	0.39**
Social influence	0.49**	0.32**	0.39**
Health consciousness	0.30**	0.19**	0.27**
Sustainable purchasing behavior	0.47**	0.35**	0.48**

** Correlation is significant at the 0.01 level (two-tailed)

Source: Author's own research.

Age has the strongest influence on all constructs. The highest coefficient is 0.51 and sits between green product knowledge and age, demonstrating that knowledge about organic products increases with age ($p < 0.001$). Level of income is also positively and significantly ($p < 0.001$) correlated with all five scales (attitude, knowledge, social influence, health consciousness and sustainable purchasing behavior). Based on this finding, it could be argued that people with higher incomes are more likely to exhibit a high level of knowledge, health consciousness and perceived social influence, develop positive attitudes, and purchase eco-friendly products. It is widely acknowledged that although young people seem to be more informed about environmental issues and more interested in ecological products, in reality older people are the main buyers, because of higher financial resources (Horodnic et al., 2022).

In the final stage of data analysis, multiple linear regression was run to test the model. Table 5 provides summary statistics of the data set.

*Table 5. Regression analysis for sustainable purchasing behavior**

Construct	β	Variable significance	Cumulative adjusted R^2	Model significance
Attitude	0.41	0.000	0.31	0.000
Health consciousness	0.30	0.000	0.39	
Social influence	0.19	0.002	0.42	
Green product knowledge	0.18	0.015	0.46	

* Note: $R^2 = 0.46$, $F(4, 592) = 186.46$

Source: Author's own research.

As Table 5 shows, attitude has a significant effect on sustainable purchasing behavior ($\beta = 0.41$, $p < 0.001$), confirming H₁. Therefore, having a positive attitude toward organic products and the environment will lead to purchasing such products. Although the literature acknowledges the existence of an attitude-behavior gap, many studies confirmed that strong environmental attitudes are a crucial predictor of ecological buying behavior, especially when combined with facilitating conditions such as availability and affordability of green products (Yener et al., 2023).

Regression analysis also highlighted that green product knowledge is significantly connected to sustainable purchasing behavior ($\beta = 0.18$, $p < 0.05$), accepting H₂. This indicates that consumers who are more knowledgeable about environmental issues and organic products are likely to engage in sustainable purchasing behaviors. Other researchers showed a strong positive correlation between environmental knowledge and the intention to buy green products, highlighting the importance of educational efforts and informational campaigns (Wang et al., 2019).

It was also found that social influence ($\beta = 0.19$, $p < 0.01$) and health consciousness ($\beta = 0.30$, $p < 0.001$) have a significant effect on the dependent variable. Therefore, it could be argued that consumers who are more influenced by their peers and who take good care of their personal health are likely to buy organic products. Regarding social influence, it is believed that people often engage in similar behaviors as their social group in order to fit in or be perceived positively by others (White et al., 2019). However, in contrast with this view, Varshneya et al. (2017) found that social norms have a minimal impact on respondents' sustainable consumption choices. Second of all, as demonstrated by Kushwah et al. (2019), health-conscious consumers often seek out natural, organic, and sustainably produced products for their perceived health benefits.

The four factors presented explain 46.6% of the variance in sustainable purchasing behavior, $F(4, 592) = 186.46$, $p < 0.001$, $R^2 = 0.46$. Attitude is the first predictor to enter the model, explaining 31% of the total variance. The order for the rest of the variables is health consciousness, social influence, and green product knowledge. On the basis of these findings, it is suggested that buying organic products is influenced by attitude, knowledge, social life, and care for individual health.

Regression analysis did not identify a significant moderating relation between gender and the variables of the model ($p > 0.05$). Therefore, gender does not have a direct moderating influence on the relationships between attitude, knowledge, social environment, health consciousness, and sustainable purchasing behavior. An independent-samples t-test was also conducted to compare sustainable purchasing behavior scores for women and men. There was no significant difference in scores for females ($M = 4.25$, $\alpha = 1.53$) and males ($M = 4.35$, $\alpha = 1.73$); $t(592) = 4.72$, $p = 0.46$. The magnitude of the difference between the means was very small. This result could indicate that psychological variables are more effective in predicting behavior compared to socio-demographic factors, as confirmed by Yener et al. (2023).

Cluster analysis was run to deliver richer insights and compare different groups of sustainability enthusiasts. Three clusters were identified based on reported behavior, attitudes and socio-demographic characteristics: actives, considerers and dismissers. Sustainability actives are those highly concerned about environmental issues, who take most actions to reduce individual footprint and feel an intrinsic responsibility to act right. Sustainability considerers represent those concerned about the environment but who do not engage in many eco-conscious actions, including purchasing organic products, due to high prices and conflicting priorities. The last category are sustainability dismissers, who have little or no interest in environmental issues and who are rarely engaged in sustainable development, as they do not care about it and do not invest time in this matter. For the current study, the largest segment is Sustainability Considerers, covering 65% of the total sample, followed by Sustainability Dismissers (20%). Sustainability Actives can be considered an emerging segment, with 15% share.

Discussion of findings

The main purpose of this research was to identify people who buy and consume organic products in Romania, as well as provide a proper explanation of drivers and barriers to sustainable consumption. Main findings revealed that, although most study participants declare a high level of environmental awareness, not all of them act upon this matter. The average number of sustainable actions taken by individuals in the study is not very high. For instance, respondents who participated in three activities or less are twice as many compared to those who participated in eight or more activities. To add more, personal interests and economic advantages are stronger associated with involvement in eco-friendly activities and sustainable consumption compared to social interests, such as climate change concerns. The results echo those found in similar studies. For instance, Liu et al. (2009) confirmed that most people engage in environmental activities for their own well-being and safety, as a way of resource conservation, not because they care about protecting the environment. The truth is that most consumers alternate daily between harmful and environmentally beneficial behavior. But once harmful activities become long-standing routines, more drastic measures are needed. Furthermore, citizens must understand that, in addition to purchasing green products, there are other actions that are equally useful in protecting the environment. These findings, combined with the size of the organic market in Romania, may depict the average shopper as an occasional rather than regular buyer of sustainable goods.

It was also demonstrated that available budget, personal health, and product attributes remain the key factors impacting purchasing decisions, with sustainability being less important. Similarly, most researchers believe that people prefer the functional attributes of products, which fulfill personal needs and desires, over their environmental characteristics (Kushwah et al., 2019). In addition, price, availability, and confusing claims were cited as the main obstacles to purchasing organic products. The efficiency of sustainable marketing and the growth of the market share of ecological products depend on addressing and overcoming these barriers.

Last but not least, regression analysis highlighted that attitude, green product knowledge, social influence and health consciousness are important predictors of sustainable purchasing behavior. The data match the results observed in other studies, highlighting that all these factors need to be stimulated in order to increase the public demand for organic products. From a socio-demographic point of view, the present study failed to confirm the findings of previous research, for example, that young people buy more ecological products or that women are more concerned about the environment (Roman et al., 2015). On the one hand, it is possible that some unique characteristics, specific to the chosen sample, are responsible for these results. On the other hand, the impact of socio-demographic attributes on ecological behavior remains an intensely debated topic in the literature, as the conclusions are often contradictory or insignificant. Therefore, it is recommended to use psychographic factors to identify and characterize green consumers.

A series of recommendations have been drawn from the findings of this study, aimed at addressing the identified challenges and leveraging opportunities for improvement. First of all, Romanian companies should concentrate on the cost savings of sustainability and develop smart solutions to combat the general misconception that organic products are too expensive. At the same time, building both mental and physical availability and winning on product superiority will help the organic market become more accessible. In addition, price

reductions and loyalty promotions should not be underestimated. Last but not least, knowledge is an indispensable asset. Therefore, the role of businesses is no longer just to sell, but to educate because, as people accumulate information about environmental issues, they begin to change the way they think and behave. The level of information of citizens can be developed through educational programs and school curricula, public awareness campaigns with incentive programs, or through websites and applications that allow users to calculate their own environmental footprint and build community engagement. It is also necessary that the country's leadership gets more involved in imposing severe sanctions on businesses and consumers who engage in unsustainable practices, while also increasing subsidies to those who operate in a sustainable way.

Conclusion

The study makes several key theoretical contributions to the field of sustainable purchasing behavior. To the best of the author's knowledge, it represents one of the first attempts to propose a conceptual framework for studying organic consumers in Romania as well as implement value-based segmentation, covering significant research gaps. The challenge of studying sustainable consumption was approached from a holistic perspective to move away from studies focusing solely on secondary data or more traditional, demographic segmentation approaches. Underscoring the importance of social context, it is, therefore, advised that marketing strategies and environmental policies are tailored based on psychological characteristics and personal interests, to address the specific needs and situations of various consumer groups.

Taking into account methodological limitations, additional national studies that include representative samples are proposed to validate and extend the results of this paper. It is possible that the findings presented are contextual and reflect the particularities of urban consumers in Romania. For example, they may have different priorities and access to sustainable products and digital tools compared to their rural counterparts. Similarly, higher income groups might exhibit different consumption patterns than lower income groups. Regarding the instrument used for data collection, experts believe that, in general, a questionnaire can partially capture real buying and consumption behavior. The main reason is that the respondents tend to overestimate their answers. Regardless of the sampling method chosen, it remains questionable whether the online environment can provide a representative and safe sample of the general population. Consequently, future papers may use qualitative research methods or traditional surveys to compare findings and improve data quality. The topic of sustainability should also be examined from more underexplored angles, like the product category level or from the perspective of companies and retailers. In addition, more efforts should be made to compare the status of sustainable consumption and production between European countries, offering examples of best practice.

To conclude, Romania has gone through significant disruptions due to a global pandemic, coupled with distinct economic conditions and socio-cultural factors. The country is only at the beginning of the road when it comes to achieving real sustainable consumption. To bring meaningful changes in society, sustainable development requires significant investment in terms of time, efforts, and resources. On the one hand, it is about global and local measures and actions that aim to establish social balance and protect the environment. On the other hand, it also refers to responsible choices translated at individual level, with each citizen having the power to contribute to a sustainable future through daily choices and

the adoption of a healthy and balanced lifestyle. Because without sustainable consumers, there is no sustainable future, identifying people's concerns and shopping behavior is essential for facilitating mainstream adoption of sustainability principles.

Hopefully, the information provided in the current study will motivate researchers, policymakers, and retailers to continue to advance scientific knowledge in the field in order for environmental protection to become a normality.

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