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ORIGINAL PAPER

ENVIRONMENTAL AWARENESS AND STUDENTS' PURCHASING DECISIONS

Natalia Kubica
Faculty of Economic Sciences
University of Warmia and Mazury in Olsztyn
ORCID: https://orcid.org/0009-0005-8708-5397
e-mail: natalia.kubica@student.uwm.edu.pl

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K e y w o r d s: ecology, environmental awareness, purchasing decisions.

A b s t r a c t

The main aim of the research was to identify the impact of students' environmental awareness on their decision-making process when making purchases. In order to effectively and comprehensively achieve the intended purpose of the research, a diagnostic survey method was used. The research tool was a survey questionnaire developed using the Google Forms tool. The survey made it possible to determine the level of students' environmental awareness and to present their attitudes and behaviours when making purchasing decisions. Knowledge of students' level of environmental awareness will allow an assessment of whether and to what extent environmental awareness translates into actual consumer behaviour and purchasing decisions. It will enable an understanding of the dynamics of change in the transition to sustainable consumption and an understanding of the factors that can have a significant impact on increasing the consumption of green goods.

ŚWIADOMOŚĆ EKOLOGICZNA A DECYZJE ZAKUPOWE STUDENTÓW

Natalia Kubica
Wydział Nauk Ekonomicznych
Uniwersytet Warmińsko-Mazurski w Olsztynie

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Abstrakt

Głównym celem badań było rozpoznanie wpływu świadomości ekologicznej studentów na ich proces decyzyjny podczas zakupów. Do skutecznej i kompleksowej realizacji zamierzonego celu badań wykorzystano metodę sondażu diagnostycznego. Narzędziem badawczym był kwestionariusz ankietowy opracowany za pomocą narzędzia Formularze Google. Badanie pozwoliło na określenie poziomu świadomości ekologicznej studentów oraz zaprezentowanie ich postaw i zachowań podczas podejmowania decyzji zakupowych. Wiedza o poziomie świadomości ekologicznej studentów pozwoli na ocenę, czy i w jakim stopniu świadomość ekologiczna przekłada się na rzeczywiste zachowania konsumenckie oraz decyzje zakupowe. Umożliwi to zrozumienie dynamiki zmian w przejściu do zrównoważonej konsumpcji oraz poznanie czynników mogących mieć istotny wpływ na zwiększenie konsumpcji dóbr ekologicznych.

Introduction

Environmental awareness plays an increasingly important role in consumer choices. It is shaped by a number of factors, not only psychological, but also social and economic factors leading to pro-environmental attitudes and behaviour (Kramer *et al.*, 2005, p. 114-118). Environmental awareness is considered to be one part of ecological literacy which is a combination of motivation and ecological knowledge to understand the effects of people's actions in the context of the environment or an individual's ability to perceive the links between human activity, environmental quality and willingness to engage in activities to protect the environment including purchasing decisions (Geng & He, 2021, p. 4).

Historically, the first definition of the concept of ecology was introduced to science in 1869 by Ernest Haeckel (Spooner, 1984, p. V; Korporowicz, 2000, p. 9). According to Haeckel, ecology is understood as knowledge related to the economics of nature – the study of the relations of plants and animals with their organic and inorganic environment, including, above all, their friendly and hostile relations with those animals and plants with which they come into direct or indirect contact (Fiedor *et al.*, 2013, p. 116-139). This was as late as the 19th century. As a result of the lack of ability, at that time, to build synthetic hypotheses on interspecies interactions, especially between plants and animals, two ecologies were formed: plant and animal ecology. In the first half of the 20th century, a general ecology was formed as a result of advances in knowledge. Biologists define the term ecology as a branch of biology whose task is to study the effects of the environment on organisms and biocoenoses and the effects of organisms on the environment, as well as the structure and functioning of natural systems (Lonc & Kantowicz, 2005, p. 6). General ecology was only followed by social ecology, which was the starting point for environmental management. Kozlowski (2000, p. 41-44) wrote explicitly that ecology is the science of the economics of nature that studies the relationships between organisms and between organisms and the environment (Witkowska-Dąbrowska, 2022, p. 62).

Taking into account the progressing climate crisis, the deepening pollution of waters with microplastics, the scarcity of good quality water, air pollution and others, it is worth considering the level of ecological awareness of the young generation and what choices they make when making purchasing decisions, what they are actually guided by, how they evaluate their knowledge of ecology and what determines the final choice of a product, does ecology have any influence on this?

Literature Review

Decision-making is one of the elements of human behaviour that one encounters in both everyday and professional life (Rebizant, 2012, p. 5). They may concern different aspects of his or her existence and have varying degrees of importance, in relation to the consequences they may have in one's life, causing both long-term changes and those that do not have a significant impact on the individual's life (Rudnicki, 2000, p. 188). In the dictionary of the Polish language, a decision is defined as 'a conclusion resulting from a choice' (*Decyzja*, 2025), and therefore it is important to know the factors that can influence an individual's decision-making process. However, it should be remembered that although decision-making is determined by many variables, the main goal of the individual facing the decision is to fulfil the needs he/she feels (Łaguna & Rudzewicz, 2002, p. 74, 75). We can distinguish four types of decisions, which include: deliberative decisions, non-routine decisions, habitual decisions, and impulsive decisions. Deliberative decisions are characterised by the consumer considering a number of different possibilities and then choosing the one that, in his/her opinion, is best able to satisfy his/her needs, taking into account his/her views, personal beliefs and priorities, as a result of which the individual goes through all phases of the decision-making process (Kieżel, 2000, p. 83, 84). Non-routine decisions, during which the consumer makes a choice based on the opinions of friends, recommendations, experience and time pressure, are another situation. They usually refer to products that have been bought before (Witek, 2007, p. 17). Habitual decisions are based on the consumer's repetition of purchase decisions that he or she has already made many times before, a fact that shortens the time and decision-making process, guaranteeing ease and speed in decision-making. They occur during purchases that we make regularly or every day, when we choose products that we know and have tried before (Adamowicz & Krasuska, 2016, p. 177, 178). The last type of decision is the so-called impulsive decision, which consists of making a decision without a prior plan, and most often involves products that are small in size and have an attractive price (Adamowicz & Krasuska, 2016, p. 177, 178). Environmental awareness is considered to be one part of ecological literacy which is a combination

of motivation and ecological knowledge to understand the effects of people's actions in the context of the environment, or an individual's ability to see the links between human activity, the quality of the environment and the willingness to engage in actions to protect the environment (Geng & He, 2021, p. 4; Kwitek & Skiba, 2017, p. 129).

Two approaches to environmental awareness can be found in the literature (Papuzinski, 2006, p. 35), namely a narrow and a broad approach. The narrow approach presents environmental awareness as a group of elements that include knowledge, views and ideas about the environment, while the broad approach defines the term as "the totality of recognised ideas, values and opinions about the environment as a place for human (society) life and development". A consumer who places a high value on the environment is characterised by an awareness of the impact of his or her choices on the natural environment (Handayani *et al*., 2021, p. 170, 171). Pro-environmental actions manifest themselves in the so-called greening of consumption, which consists in satisfying the consumer's needs with goods and services characterised by the absence of harmful effects on the environment, a term that can manifest itself, among other things, through the economical use of goods, as well as the reduced consumption of products whose manufacture involves the use of non-renewable resources, the purchase of goods that leave behind a minimum amount of consumption waste and the purchase of environmentally friendly products that have a limited negative impact on the environment (Patrzałek, 2016, p. 160). The environmentally responsible consumer (Pabian, 2013, p. 189) seeks to reduce consumption by reaching for sustainable, economical and recyclable products (Tarapata, 2020, p. 210, 211). Consumers' environmental awareness stimulates their interest in the topic of the environment, as a result of which the consumer shifts from selfish satisfaction of his/her own needs to behaviours that have a positive impact on the environment. This is reflected in consumer behaviour and decisions, which are the result of consumers perceiving the purchase of a green product as having a real impact on protecting the environment and preventing its degradation (Tarapata, 2015, p. 54, 55).

Environmental awareness is shaped by a number of factors, not only psychological, but also social and economic factors leading to pro-environmental attitudes and behaviour (Kramer *et al*., 2005, p. 114-118).

Methodology of Research

The research was conducted using a diagnostic survey method. The research tool was a survey questionnaire developed using the Google Forms tool. It contained a total of 13 questions and consisted of 1 open-ended question and 12 closed questions including 11 single-choice questions and 1 question where respondents could mark more than one answer. The survey was conducted

via Internet, using the purposive selection technique with the snowball method from the student population of the University of Warmia and Mazury in Olsztyn. Eighty-five respondents took part in the study. After analysing the questionnaires, they were divided into three research groups according to their fields of study: I (35): Economics, Management, Management and Production Engineering, Logistics; II (34): Medicine, Nursing, Physiotherapy, Environmental Protection, Forestry, Zootechnics, Animals in Recreation, Education and Therapy, Engineering in Logistics, Veterinary Medicine, Food Technology and Human Nutrition, Construction and Computer Science; III (31): Law, Pedagogy, Psychology, Logopedics, Administration, Analytics and Public Management, Homeland Security and Criminology.

Results of Own Research

The survey showed that for 6% of respondents ecology is of no importance, while for 7% it is of little importance and for only 9% it is of very high importance. The results show that ecology is most important for group II, where 21% of respondents rated its importance at 7 and only 3% considered it unimportant (Fig. 1). Group I was dominated by a rating of 6 (20%), with 7% giving no importance to ecology. Group III indicated the highest rating (9) in some respondents, but as many as 12% considered ecology unimportant, with ratings of 4 and 5 dominating.

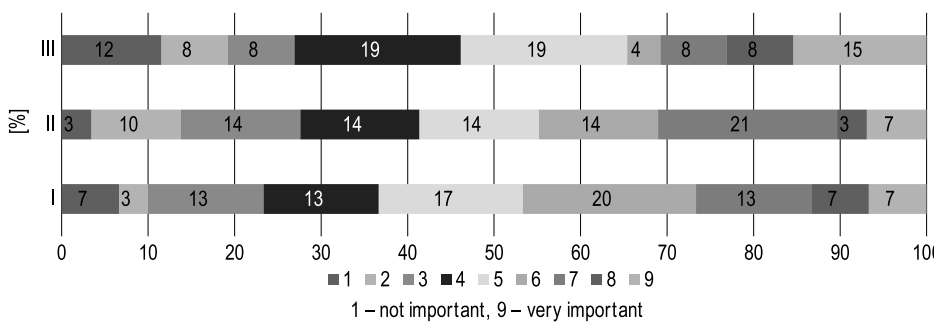

Fig. 1. Share of indications regarding the importance of ecology for the three groups of respondents

Source: own elaboration based on survey.

Respondents also rated their environmental knowledge (Fig. 2). Most respondents (22%) found it to be good, while 4% and 12% found it to be high and very high. A low level of knowledge was declared by 6% of respondents, while more than 50% described their knowledge as moderate. More than 66% of group I respondents rated their knowledge as at least moderate and only 7% as low.

In group II, 24% of students declared very high ecological knowledge, but 20% rated it as very low or low. The lowest level of ecological knowledge was indicated in group III, where 38% of students describe it as low or very low, which may be due to less emphasis on ecology in their education. Group III includes students in the humanities, pedagogy and law. The results may suggest that although group I does not attribute the greatest importance to ecology, they may have more frequent contact with theoretical knowledge, which influences a higher level of ecological knowledge. Group II, although declaring a high importance of ecology, shows more variation in the evaluation of their knowledge, which may be due to individual interests. The results may also be a result of the students' subjective self-assessment, whose level of self-confidence may have influenced the over- or under-assessment of their own ecological knowledge. Respondents rated their ecological knowledge on a nine-point scale (1 – no knowledge, 9 – very high knowledge). The largest number of respondents (22%) rated it as good, while 4% and 12% rated it as high and very high. A low level of knowledge was declared by 6% of respondents, while more than 50% described their knowledge as moderate.

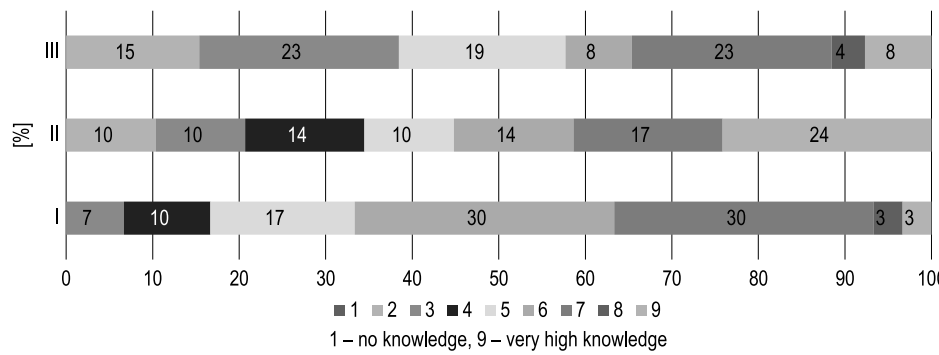

Fig. 2. Share of indications concerning environmental knowledge in three groups of young respondents

Source: own compilation on the basis of surveys.

The sources from which respondents derive their knowledge of ecology are also an important theme in the research (Fig. 3). A multiple-choice question was asked to explore these. The results indicate that the Internet (85%) and social media (76%) currently play a key role in providing information that is a source of knowledge and contributes to the environmental awareness of society.

The research also addressed the impact of product attributes on purchase decisions. The focus was on attributes such as availability, price, quality, brand, product composition, organic packaging and organic origin of the product. Respondents were asked to use a nine-point scale to rate the influence of a given attribute on their decision to purchase a product, with 1 meaning the attribute has no influence and 9 meaning it has a very strong influence (Tab. 1).

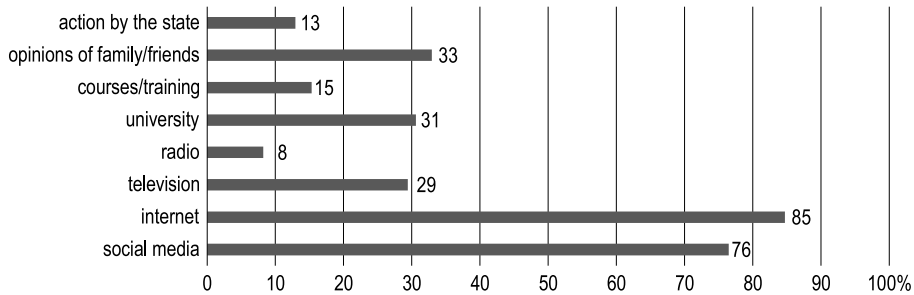

Fig. 3. Share of indications of respondents' sources of ecological knowledge
Source: own elaboration based on survey.

Table 1

Influence of product characteristics on purchase decisions [%]

Feature	Impact assessment									
	1	2	3	4	5	6	7	8	9	total
Availability	1	5	6	7	8	5	16	18	34	100
Price	1	2	7	5	5	5	9	22	44	100
Quality	0	1	4	7	2	6	20	19	41	100
Brand	9	9	12	11	15	19	15	6	4	100
Product composition	0	2	4	9	8	13	19	16	28	100
Ecological packaging	11	15	15	11	9	9	12	8	9	100
Organic origin of the product	7	14	14	11	14	9	9	11	11	100

Source: own elaboration based on research.

The research showed that for the consumers the very strong influence on their purchasing decision have following features: availability (34%), price (44%) and quality (41%). In the highest category their received the most indications, which is in line with the behavioural economics literature. According to Kahneman and Tversky's prospect theory, consumers have a loss-avoidance and preference for benefits, resulting in quality increasing satisfaction, price influencing perceived value and availability facilitating choice (Solek, 2010, p. 24-26).

Environmental aspects, such as packaging or product origin, were considered less important than the above-mentioned characteristics (20% in total in the highest category), which may indicate the priority of financial considerations in purchasing decisions. Consumers do not always see the long-term benefits of green choices, such as the impact on health or savings. For green to become a key purchasing factor, it needs to coexist with availability, price and quality, which, according to the survey, have the greatest impact on consumer choices.

Students were asked to indicate their willingness to pay a higher price for organic products (Fig. 4). However, it should be borne in mind that respondents

who declared a willingness to pay a high price difference between organic and standard products are also able to purchase the product at a lower price. The survey showed that the vast majority of respondents, i.e. 79%, are willing to pay up to 10% more for organic products. A significant proportion of respondents accepts a price difference of up to 20% (52%) and up to 30% (28%). The willingness to pay a higher difference (above 40%) is minimal – only 2% in summary. Additionally, 21% of students said they would not buy an organic product if it was more expensive. The results suggest that price is one of the limiting factors for green choices, and that the most reasonable price difference, accepted by most consumers, is a price higher up to 10%.

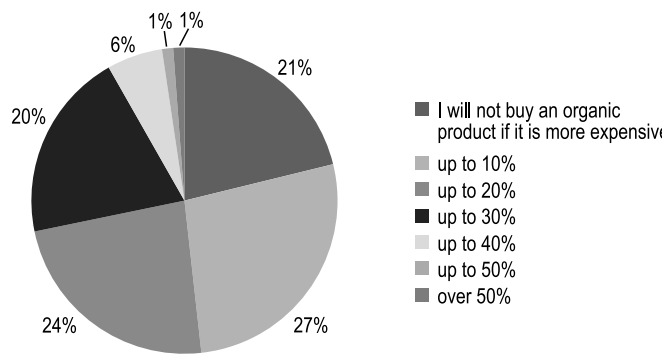

Fig. 4. Share of indications regarding respondents' willingness to pay a higher price for an organic product
Source: own elaboration based on survey.

Students were also asked how they rated the importance of eco-labels in their purchasing decisions. When comparing the results across the three groups of students (Fig. 5), it should be noted that group III had the highest percentage of students (27%) rating the importance of eco-labels as important and very important, and it should also be noted that group III has the lowest percentage of respondents for whom eco-labels have no or very little importance. For respondents in group II, the importance of eco-labels is more varied. The most frequently selected responses to 3, 4 and 7 (17% each), suggesting a moderate interest in eco-labelling. For group I, up to 27% of students find ecolabels moderately important. It should be remembered that group one is made up of economics and management students, which makes them aware of the importance of ecolabels in their purchasing decisions. Thanks to their knowledge, they understand that eco-labels can testify to a product's conformity with consumer values and influence its perceived value, making them an important element of choice. This distribution of results, may suggest that even though students in research group III declare the least environmental knowledge among the surveyed collective, both the individual views of the group and the desire

to protect the environment make students pay attention to eco-labels of products rather than basing their choices of goods on their environmental knowledge. For groups I and II, eco-labels are less important, probably due to their higher ecological knowledge, which is more important to them than eco-labelling, and they therefore make their choices based on their knowledge rather than solely on the label.

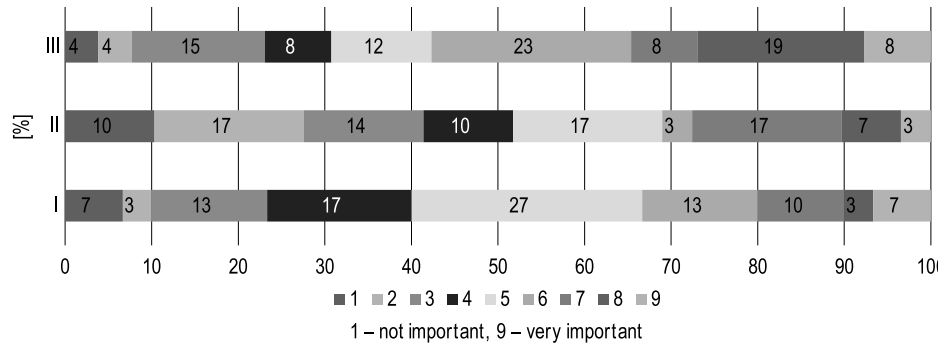

Fig. 5. Share of indications regarding the importance of eco-labels in different groups of students

Source: own elaboration based on survey.

The research indicates that 52% of young respondents have at least once refrained from buying a product that has a negative impact on the environment, a point that suggests that ecology has some importance in their purchasing decisions for only half of the respondents. Ecological factors are not a sufficient reason to abandon a purchase, suggesting that the ecological aspect is not dominant in consumer preferences. If one looks at the frequency of abandonment of purchases of organic products in the different student groups, it can be seen that for each of the three groups the responses are almost identical. Almost 50% of the respondents in each group indicated that they had never given up buying a product because of its negative environmental impact, while the remainder of each group (around 50% each), declared that there had been a situation in their life where they had given up buying a product for this reason (Fig. 6).

An aspect worth noting is also the frequency of the decision to buy organic products. The study used a nine-point scale (1 – I do not buy, 9 – I always buy). Only 6% of respondents always buy organic products and 13% do so very rarely or not at all. The largest percentage (26%) declares that they buy them quite often. For the others, a moderate interest in organic products was noticed, which means that these products are present in their lives, but do not play an important role. Considering the student groups, it can be seen that respondents belonging to groups I and II are characterised by a similar interest in organic products (Fig. 7). The results show that for both respondents of group I consisting

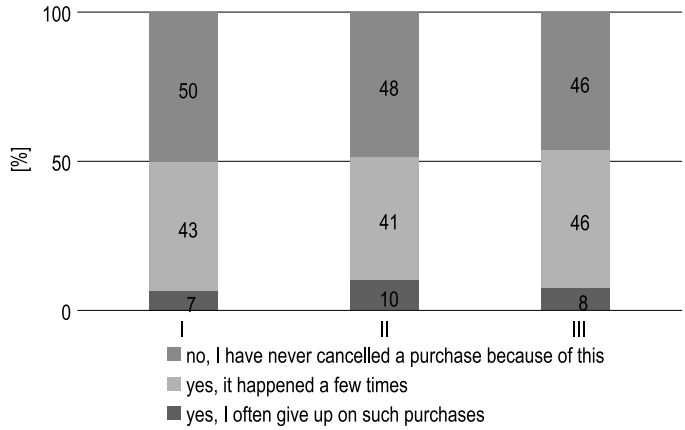

Fig. 6. Share of indications regarding frequency of resignations from non-ecological goods purchases in different groups of students

Source: own elaboration based on survey.

of business and economics students and group II including students of medical, natural sciences and technical sciences, the frequency of purchase of organic products is moderate (37% and 31%), this means that consumers choose organic goods but they are not a major part of their daily life. It should be noted that both groups rated their ecological knowledge as relatively high, which may be the main reason for choosing organic products. In addition, in the case of group II, ecology appeared to be the most important of all the groups surveyed, which may indicate a greater environmental awareness and stronger environmental priorities. Against the background of the two groups above, group III looks worse, in which, although a significant percentage of respondents always buy organic products, in total as much as 35% of the group hardly buys them at all, which may be due to the lower ecological knowledge of group III.

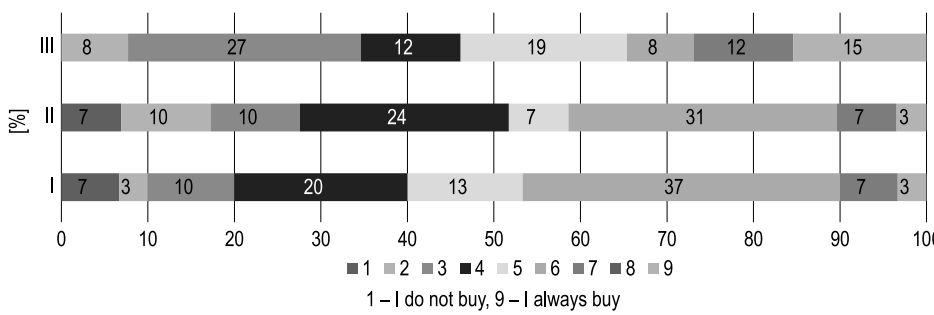

Fig. 7. Share of indications regarding the frequency of purchase of organic products in individual student groups

Source: own elaboration based on research.

Respondents who rated the frequency of their choice of organic products between 2 and 9 were asked to indicate what prompted their purchase (Tab. 2). A scale of 1-9 was used, where 1 indicated no importance and 9 indicated very high importance. The absence of harmful substances was one of the most important reasons (63% indicating 9, 8 and 7), as were health reasons (60%). Recommendations from friends and family were less important, which may be due to social relationships or trust. Caring for the environment was of varying importance (33% indicating high importance, 35% indicating low importance), which may reflect differences in environmental values and awareness. Random choice was the least influential (44% indications of 1, 2 and 3), suggesting that purchasing decisions were informed and thoughtful.

Table 2

Respondents' reasons for purchasing an organic product [%]

Rationale for buying an organic product	Rating scale									
	1	2	3	4	5	6	7	8	9	total
Caring for the environment	3	16	16	5	14	14	9	11	13	100
Health considerations	1	8	8	9	6	9	16	14	30	100
Recommendations from friends/family	14	4	14	14	9	9	14	11	13	100
No harmful substances	1	5	10	9	4	9	11	28	24	100
Random selection	23	11	10	8	15	5	6	10	13	100

Source: own elaboration based on research.

Respondents were asked about features that could increase consumption of green goods (Tab. 3), rating them on a scale of 1-9 (1 – definitely will not increase, 9 – will increase very much). According to the gathered data from the research, for the consumers the feature which could have the highest influence on ecological goods consumption is lower price (81% of indications in summary, including "7 – will increase, 8 – will increase much, 9 – will increase very much"), which definitely would influence consumers' purchasing decisions. It confirms the importance of economic motivators in consuming ecological products. According to young respondents the second feature which would have significant influence on consumption increase is better availability, which received 67% of indications in summary in following categories: "7 – will increase, 8 – will increase much, 9 – will increase very much" consumptions of ecological goods, suggesting that easier access favours environmentally friendly choices. According to the respondents also more product information (54% in summary, including 7, 8 and 9) and better labelling (52% in summary, including 7, 8 and 9) could be an relevant factor contributing to increase in consuming ecological products. The least influential, according to the respondents, are dedicated places for selling organic products.

Table 3

Factors likely to increase consumption of green goods [%]

Feature	Rating scale									
	1	2	3	4	5	6	7	8	9	total
Lower price	0	1	4	9	0	5	7	9	65	100
Improved accessibility	0	2	4	8	8	11	8	19	40	100
Improved signage	2	6	8	9	13	9	14	13	25	100
Purchase point for organic products only	14	13	14	12	8	7	11	4	18	100
More information on organic products	2	1	12	9	12	9	12	19	24	100

Source: own elaboration based on research.

Summary

Conducted research, despite having restrictions resulting from small research sample size and applicated method of its selection, allowed on formulation relevant conclusions regarding analysed problem. Although results can not be fully generalised to the whole population, gathered data and observations delivered valuable information, which can constitute starting point for future, more deepened researches.

The survey showed that environmental awareness has a significant impact on students' purchasing decisions, although the mere presence of environmental aspects in products is not always enough to make a decision about their choice. More than half of the respondents rate their environmental knowledge at least average, suggesting that environmentally aware consumers are present among the respondents. Respondents to the survey mainly derive their knowledge of ecology from the internet and social media.

The analysis showed that the environmental aspects of the products are not a sufficient factor to induce consumers to purchase the product. However, it was noted that the most important attributes of goods inducing students to purchase them are availability, price and quality. Therefore, it can be presumed that if ecological attributes were combined with availability, attractive price or quality, consumption of goods could change positively – increase.

Students pay attention to the organic labelling of products, and half of them abandon the purchase if the product does not meet organic requirements. The frequency of purchase of organic products is high, and the most important premises favouring their purchase are the absence of harmful substances and health reasons. Additionally, respondents identified reasons that could increase the consumption of organic goods, which are mainly lower price, better availability and more information about organic products

Among the three groups of students analysed, differences in perception of ecology were noted. Group II (medical, natural sciences and technical faculties) shows the highest concern for ecology, while group I (economics and management) rates its ecological knowledge highest. Group III (humanities and social sciences), despite attaching great importance to ecological signs, is characterised by the lowest rating of its ecological knowledge. These differences are due to the nature of the fields of study and their relationship to ecology. Students in natural and medical sciences have a better understanding of the impact of ecology on health and the environment, which leads them to be more concerned about these issues, while students in economics and management analyse ecology mainly in the context of the economy and the market. Humanities and social sciences majors may offer fewer opportunities to explore environmental issues, which may explain their students' lower level of knowledge.

Translated by Author

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