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THE INFLUENCE OF SOCIO- DEMOGRAPHIC CHARACTERISTICS ON ENVIRONMENTAL AWARENESS

Abstract: *The present study investigates the state of environmental awareness of Polish people divided into sociodemographic characteristics. Important questions were what is the level of pro-ecological awareness of Polish residents? Which sociodemographic characteristics differentiate the pro-ecological awareness of the respondents? A questionnaire survey was carried out in 2023 to understand the attitude of Polish citizens towards environmental protection. The authors carried out a survey using the computer-assisted website interview (CAWI) technique among 305 people representing Polish adult final buyers, mostly students. The online survey questionnaires were distributed using the servers of the Google. The chi-square test was used to determine the representativeness of the sample file. According to survey results, the higher education the respondents had, the clearer their views on what environmental protection is. Women were much more likely indicated the statement, that a person's higher ecological awareness makes them undertake pro-ecological actions.*

Keywords: *ecological awareness, environment, sociodemographic characteristics.*

1. Introduction

The effectiveness of environmental protection depends on the involvement of all citizens in specific actions. It includes, among others, conscious consumption, limiting waste production and its appropriate segregation, saving resources (energy and water), reducing the negative impact on air quality. Forming and strengthening ecological awareness in society is important for the implementation of environmental protection standards. Achieving environmental goals depends on the level of ecological competences represented by society. The concept of ecological awareness consists of such elements as: knowledge, assessment, attitudes and possible postulates

regarding ecology. This concept can be used in two meanings. In a broader sense, it means the totality of recognized ideas, values and opinions about the natural environment as a place of human life and development, common to specific groups in a given historical period. In a narrower, more practical sense, ecological awareness is the state of knowledge, views and ideas of people about the role of the environment in human life (Klos, 2015). In the present times, problems with environmental pollution and broader social problems are among the most important and most common worldwide. Education for the creation of pro-ecological attitudes and those conducive to sustainable development is one of the key goals of UNESCO (Rahmani et al., 2021). It is also the

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foundation for the implementation of the 17 UN Sustainable Development Goals (Gosek, 2024). An essential element for increasing pro-ecological awareness and achieving the sustainable development goals is for societies to recognize these issues as important and a priority (Kleespies & Dierkes, 2022). There are three types of attitudes noticeable in society: pro-ecological, ecological indifference and anti-ecological attitude (Stefaniuk, 2021). Ecological awareness is the awareness of the dependence of humans on the rest of nature and the awareness of the impact that human activities have on the surrounding environment. Consciousness means not only an adequate level of knowledge but also a rational and emotional assimilation of it that causes certain actions to be taken (Gajdzik et al., 2024). In the face of complex problems such as climate change, economic and social injustices, threats to democracy and human rights, and many others, the ecological awareness of societies becomes crucial (Ardoin et al., 2023; Arici & Gok, 2024; Palaniappana, 2024).

Taking the above into consideration, the main objective of the article will be to attempt to determine the level of ecological awareness of Polish residents. To achieve the main objective of the work, two research questions were adopted:

RQ1: What is the level of pro-ecological awareness of Polish residents?

RQ2: Which sociodemographic characteristics differentiate the pro-ecological awareness of the respondents?

2. Literature review

Environmental awareness can be defined differently, which is related to the specificity of scientific disciplines, i.e. economics, philosophy, sociology, political science or pedagogy. (Papuziński, 2006; Fu et al., 2020). According to one of the more general definitions, the term environmental awareness means: “a state of being aware, having knowledge about, and being conscious

of the environment in which people live, which tends to influence people’s development and pro-environmental behavior” (Harju-Autti & Kokkinen, 2014). Much earlier, environmental awareness was understood as a combination of motivation, knowledge and skills (Partanen-Hertell et al., 1999). Several serious challenges in measuring environmental awareness on an international scale were discussed by Harju-Autti & Kokkinen (2014), Robertson & Barling (2017); Kencanasari et al., (2019); Dabbous et al., (2023); Sabal (2024).

Franzen and Meyer (2010) in their research) found that the level of environmental awareness of a society influences its environmental behaviour. Many studies have shown correlations between environmental awareness and purchasing behavior. (Chen & Tung, 2014; Wierzbiński et al., 2021). Ecological awareness is increasingly shaping consumption patterns, especially in developed countries, influencing habits and purchasing decisions for organic products (Shao, 2016, Wierzbiński et al., 2021).

The diverse European landscape of environmental awareness is shaped by political values, financial constraints, and country-specific point of view (Boermans et al., 2024). Most often, people want to protect the environment because of concern for health and future generations, and responsibility for the state of the natural environment is placed on each citizen. Both citizens and authorities participate in shaping attitudes and behaviors towards the environment. Research conducted by Boermans et al., (2024) in Germany, the Netherlands and Poland shows that "ecological awareness varies between countries and generations, reflecting distinctive environmental strategies shaped by cultural and developmental factors. Participants in each region and age group exhibit diverse levels of engagement in sustainable activities and highlight issues such as the need for tailored strategies, concerns related to eco-labelling, greenwashing, and inadequate waste

treatment, as well as information gaps".

The concept of environmental citizenship is increasingly used in research literature, which is usually defined as a citizenship driven by green ideas which result in environmentally friendly actions (Dobson, 2007; Larson et al., 2015; Schild, 2018).

It seems that education plays a key role in environmental awareness. Therefore, higher education institutions (but also lower education) must prioritize providing high-quality education while preparing future entrepreneurs to adopt green and sustainable business practices (Tor, 2009; Aşıksoy et al., 2020; Barba-Sánchez et al., 2022; Legenzova et al., 2023; Mambali et al., 2024).

3. Methodology of research

In addition to the literature review, research surveys were conducted using the computer-assisted website interview (CAWI) technique. The online survey questionnaires were distributed using the servers of the Google. The purpose of the research was to investigate current state of environmental awareness of Polish people. The research process related to the collection of primary data consisted of two stages: pilot and main studies. In each of them, questionnaire surveys were used to collect primary data. The actual survey was carried out among 305 people representing Polish adult final buyers, mostly students. The actual survey was carried out in April and May 2023. According to the Central Statistical Office, 37,637 million people lived in Poland at the time of the research. The following gender and age amounts were used in the study:

- 51% of male and 49% of female,
- 68,9% of people aged 18 to 26,
- 34,1% people from village, 65,9% from city,
- 28,2% with higher education,
- 61% students.

The research procedure consisted of the following stages:

1. Selecting a research sample;

2. Constructing a prototype of a survey on changes in consumer behavior in terms of returns during a pandemic and verifying the survey in a pilot group.
3. Analysis of results, making corrections in survey questions.
4. Conducting research on a verified and tested questionnaire, hosted on the servers of the Google.
5. Analyzing and discussing the results obtained from the study.
6. Drawing conclusions based on analysis and discussion, limitations and future research directions.

4. Analysis of the obtained research results

In the following part of the study, the results will be presented in relation to the general state of the environmental awareness among Polish citizens. Figure 1 shows the results of general understandability of the concept of "taking care of the natural environment" and its interpretation by respondents. It can be clearly stated that most respondents (64,9%) declare that taking care of the natural environment is an important and responsible issue. This may be caused by the increasing ecological education of society in Poland, caused by various marketing campaigns and popularization of a given topic in the media. However, 21% of respondents believe that it is their daily duty, which may indicate that a given topic is rooted in their lives, which may translate into specific actions in this area. This is not just a declaration that the topic of environmental protection should be considered, but solutions should be implemented to prevent degradation. 9.5% declare that taking care of the environment is very difficult issue. A small percentage of respondents (3.9%) believe that caring for the natural environment is unimportant and only 0.7% admit that taking care of the environment gives them satisfaction.

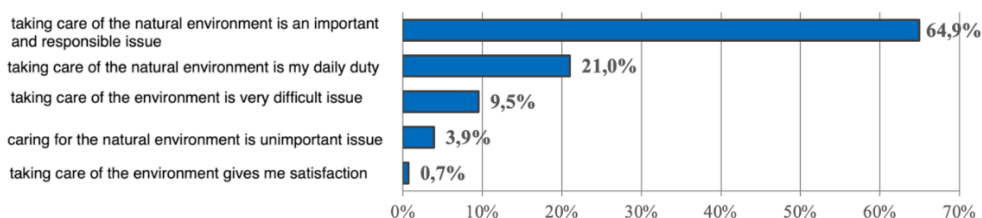


Figure 1. Assessment of what “taking care of the natural environment” is

Figure 2 shows the results regarding the respondents' choice of the statement that best reflects their proper approach to protecting the natural environment. 63.2% of respondents believe that higher ecological awareness of a person makes them undertake pro-ecological actions. Therefore, it is right to create marketing campaigns and expand education at school to increase this ecological awareness. However, 16.8% believe the opposite, that higher environmental protection restrictions contribute to more efficient functioning of society. According to

this part of the respondents, the “carrot and stick” method may be the right way to increase environmental protection among citizens 13.8% of respondents believe that pro-ecological activities should be carried out in a systemic manner, thus shifting responsibility to the government. 6.3% of respondents have no opinion on this subject, which is very sad and shows that these people do not pay much attention to environmental protection.

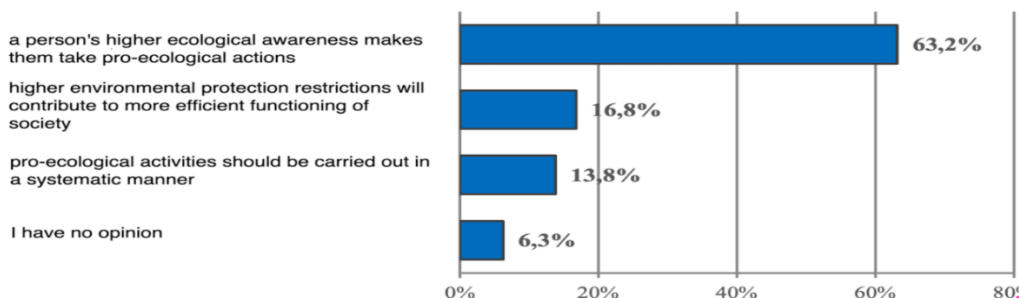


Figure 2. Selecting the statement that best reflects the appropriate approach to environmental protection

The result of the chi-square test ($p < 0.05$) showed a statistically significant relationship between the choice of the statement that best reflects the respondents' proper approach to protecting the natural environment, compared to their gender (Table 1). Women were much more likely to indicate the statement (70.6%) that referred to the fact that a person's higher ecological awareness makes them take pro-ecological actions than was the case for men. The result of the chi-square test ($p < 0.05$) showed a statistically significant relationship between

respondents' choice of the statement that best reflects the proper approach to environmental protection and their education (Table 2). The higher the education of individuals, the clearer their views on what environmental protection is. People with lower education were much more likely to declare that they had no opinion on the subject (44.4%).

Table 1. Selection of the statement that best reflects the appropriate approach to environmental protection and the gender of the respondents [n=293]

Factor	female [n=143]	male [n=150]
A person's higher ecological awareness makes them take pro-ecological actions	70,6%	57,3%
Higher environmental protection restrictions will contribute to more efficient functioning of society	16,1%	16,0%
Pro-ecological activities should be carried out in a systematic manner	11,2%	17,3%
I have no opinion	2,1%	9,3%
Generally	100,0%	100,0%
Statistical significance	$\chi^2=10,56187, p=0,01434^*$	
χ^2 – chi-square test result; p – statistical significance; * - $p < 0,05$		

Table 2. Selection of the statement that best reflects the appropriate approach to environmental protection and the education of respondents [n=305]

Factor	primary [n=9]	professional [n=6]	secondary [n=204]	higher [n=86]
a person's higher ecological awareness makes them take pro-ecological actions	44,4%	50,0%	62,6%	67,4%
higher environmental protection restrictions will contribute to more efficient functioning of society	11,1%	16,7%	16,3%	18,6%
pro-ecological activities should be carried out in a systematic manner	0,0%	0,0%	15,3%	12,8%
I have no opinion	44,4%	33,3%	5,9%	1,2%
Generally	100,0%	100,0%	100,0%	100,0%
Statistical significance	$\chi^2=35,39696, p=0,00005^*$			
χ^2 – chi-square test result; p – statistical significance; * - $p < 0,05$				

The chi-square test result ($p > 0.05$) did not show a statistically significant relationship between the respondents' assessment of what caring for the natural environment means and their age. The chi-square test result ($p > 0.05$) also did not show a statistically significant relationship between the statements selected by respondents that, in their opinion, best

reflect the right approach to protecting the natural environment and their age.

5. Discussion

Analyzing the obtained research results, it can be stated that the respondents in the vast majority are characterized by ecological

awareness and see the importance of caring for the environment. Only 3.9% of respondents consider this issue to be unimportant. At the same time, respondents indicate that caring for the environment requires effort from them and although it generally does not give them satisfaction (less than 1% of respondents indicated this answer), they are aware that this issue is important and that regular efforts should be made to take pro-ecological actions (21% of respondents consider them their daily duty). The respondents' answers also confirm the statements present in the literature that broader education on environmental issues is necessary because people's greater knowledge in this area translates into their undertaking pro-ecological actions. (Paradowska et al., 2023; Frensey et al., 2022, Pramita et al., 2023). The burden should be placed on education and voluntary incentives, however, because only 16.8% of respondents believe that pro-ecological activities can be effectively stimulated by top-down orders and regulations. A small number of respondents also emphasize that more systemic solutions are needed in this area. The research results therefore suggest that the key to changing public awareness should be continuous education, not top-down orders or orders, which will not be as effective. Similar conclusions are presented by Zaval and Cornwell (2017), who state that using social tools such as norms and incentives, knowing the values of the audience, and facilitating the participation of non-experts through a variety of active participatory strategies all hold promise in addressing environmental challenges.

Comparing the responses by gender, women show greater ecological awareness than men. Our findings are supported by research conducted by Eisler and Eisler, which shows that women are more motivated to engage in pro-ecological activities and take risks related to ecological and environmental problems more seriously. This is also confirmed by Witek (2021) research. Men, on the other hand, more often indicated the need for

systemic regulations in this area or showed an indifferent attitude towards environmental issues (9.3% had no opinion on this matter). Comparing the answers according to the education of the respondents, one can conclude that people with primary or secondary education are in many cases unable to determine what their approach to environmental protection is and often do not have an opinion on this issue. In turn, people with higher education most often indicate (67.4% of responses) that an increase in individual awareness influences greater involvement in environmental issues. Similar conclusions were reached by Bednarek-Gejo et al. (2012) surveyed 240 students of the University of Business and Health Sciences in Lodz, Poland to assess the level of knowledge and awareness of students regarding pro-ecological behaviors and taking actions for the natural environment. Their study showed that regardless of place of residence (city vs. countryside), surveyed students showed high readiness and understanding of the essence of pro-ecological actions. These results again seem to confirm that education in the field of creating ecological attitudes should be a fundamental issue for decision-makers. The need for education (especially among young people) is also highlighted by Stępień-Słodkowska et al. (2018). They conducted research among 3,537 secondary school students from the West Pomeranian Voivodeship. Researchers concluded that knowledge about environmental protection is insufficient. In addition, Mitchell et al. (2015) emphasize that educating youth on environmental issues can, to some extent, influence intergenerational education. The issue of raising awareness of ecological problems and environmental protection among students is indicated in their work by Cepić and Jurčević (2022), who consider it necessary to familiarize students with basic ecological concepts and pro-ecological behaviors.

6. Conclusions

Based on the conducted research process, several conclusions and recommendations can be formulated. Firstly, most of the surveyed respondents are characterized by ecological awareness. Secondly, in Poland (as in other countries, as indicated by the literature review), the basic issue is still providing comprehensive ecological education, which should result in broader involvement of society in matters of broadly understood ecology. Thirdly, the gender and education of the respondents have an impact on ecological awareness. Fourthly, according to most respondents, education is the most effective form of stimulating pro-ecological involvement.

To sum up, one of the basic tools in the development of ecological awareness is ecological education. Thanks to it, we can educate and raise society in the spirit of respect for the natural environment - our environment. Educating young people and children in the field of ecology is extremely important, so that from an early age they have knowledge about why this problem is important and what can be done to stop it. It is also necessary to consider protection in a context not so much global, but primarily local. It is care for our environment that should take first place, because its quality will depend not only on our health and life, but also on future generations that will appear in this place after us.

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