



Article

Attitudes and Pro-Environmental Behavior of Representatives of Generation Z from the Example of Poland and Germany

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Abstract: Generation Z (Gen Z) accounts for 40% of the world's consumer population. Its representatives set the market trends that will shape products and services in the near future. Taking into account the potential and characteristics of Gen Z, it seems reasonable to ask questions such as the following: To what extent are young people engaged in pro-environmental actions? Is awareness of the state of environmental degradation and consumer pragmatism related to nationality? The main purpose of this article is to assess the attitudes and pro-environmental behavioral patterns of young consumers in Poland and Germany. We conducted a review of studies available in the literature related to trends in the behavior of consumers from Gen Z and the greening of consumption. Moreover, we carried out empirical research using CAWI (Computer-Assisted Web Interviewing) methodology, with the participation of representatives of Gen Z. This study showed differences between Gen Z representatives from Poland and those from Germany in terms of their attitudes and declarations towards pro-environmental market behavioral patterns. This research has revealed a higher sensitivity towards the degradation of the environment among young consumers from Germany and has shown a lower level of environmental awareness among the representatives of Gen Z from Poland.

Keywords: Generation Z; pro-environmental behavior; Poland; Germany; market behavior; Sustainable Development Goals; sustainable consumption



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1. Introduction

Gen Z accounts for 40% of the world's consumer population. Its representatives set the market trends that will shape products and services in the near future [1]. In the context of people starting their professional career—who, over the next twenty years, will be the main purchasing power—particular attention is given to combining their purchasing potential with the assumptions of the UN 2030 Sustainable Development Goals. These points concern, among others, involvement in pro-environmental activities and environmental protection, on both institutional and business levels [2]. The concept of sustainability rests on three main pillars: environmental, economic, and social. It attempts to reconcile the available resources and needs of the quickly growing world population [3]. Taking into account the potential and characteristics of Gen Z, it seems reasonable to ask the question of to what extent they are ready to convert the declared values into actual purchasing decisions.

The research on consumer pro-environmental behavior and the choices that consumers make indicates that an important aspect thereof is consumer knowledge and ecological awareness. The method and identification of factors determining the pro-environmental behavior of consumers may indicate information gaps and the need to educate consumers in order to indicate the optimal solutions regarding their purchasing behavior. Numerous

studies on the pro-environmental behavior of consumers indicate the need for a deeper comparative analysis. This is difficult, as there is no harmonized data set on pro-environmental consumer behavior. Therefore, it seems justified to conduct research and analyses in this area. Previous research on the consumer behavior of Gen Z most often presents case reports in selected markets in specific countries. Due to (1) the international comparative analysis conducted and (2) the focus on Gen Z, this study certainly fills this existing research gap.

The aim of this article is to present the differences in the pro-environmental market behavior of consumers representing Gen Z in Poland and Germany. We attempt to show the link between the consumers' declared assessment regarding the current state of the natural environment, their assessment of the purposefulness of actions taken by institutions and enterprises in the field of environmental protection, their readiness to incur the additional costs related to the purchase of ecological products, and their involvement in the proposed initiatives. Hence, we pose the following research questions:

RQ 1: Are there any differences between the market-oriented pro-environmental behavior of consumers from Gen Z from Poland and those from Germany, and, if so, how significant are they?

RQ 2: Are representatives of Gen Z involved in the pro-environmental activities undertaken by producers and service providers when making purchase decisions and, if yes, to what extent?

RQ 3: What factors limit Gen Z consumers to the greatest extent in undertaking pro-environmental market behavior?

The answer to the above questions will result in an indication of whether there are differences that determine the pro-ecological activity of Gen Z consumers in the international market, and, if so, to what extent. The answers will, moreover, indicate recommendations for supporting pro-ecological attitudes in the European Union. We believe that the issue of ecologically driven consumer choices, supporting the green agenda of the Commission, will remain a crucial topic for European legislators in the years to come. This study may serve as a point of reference while drafting law proposals that are supposed to underpin the more sustainable choices of European consumers.

In order to achieve the main goal, and to find answers to the above-mentioned questions, we conducted our own research. This research was carried out with the help of a questionnaire. The answers of the surveyed participants were examined with the CAWI (Computer-Assisted Web Interviewing) method on a sample of respondents born in 1997–2004 living in Poland and Germany. The methods of descriptive statistics and multiple regression (structural modeling with observable variables) were used to analyze the research results.

The manuscript begins with an introduction; then, presents a review of the literature; describes the materials and methods used; presents the results of the research; then, carries out a discussion; and ends with conclusions.

2. Literature Review

The number of studies concerning Gen Z has been growing in recent years. It is only now that we can see its representatives enter the marketplace and finish university studies. Twenge, Campbell, Hoffman, and Lance [4] define a generation as a group of "individuals born around the same time who share distinctive social or historical life events during critical developmental periods." They are influenced by a broad range of powers and events (families, peers, media, popular culture, or crucial socio-economical occurrences), which create a common value denominator and distinguish them from the people born before and after them.

The literature, however, already varies in the definition of the timeframe in which the representatives of Generation Z—for others, Gen Z or post-millennials—were born. While some [5] emphasize that Gen Z was born between 1997 and 2013, others [6] stick to the time between 1995 and 2012. Chomałowska and Żarczyńska-Dobiesz [7], as well as Kroenke [8], even go as far as to emphasize that Gen Z was born from 1991 onwards. However, based

on the literature, we can broadly agree that Gen Z is a group born between the mid- or late-1990s and the beginning of the 2010s. Many of the people that are a part of that group are the children of Gen X, but some may be the children of the later-born Baby Boomers.

When writing about Gen Z, scholars tend to focus on three spheres: human resource management [5–8], education [9,10], or consumer behavior [11–16]. Some of the texts' added values are case study specifications (e.g., [7]) or focus on specific countries, such as China [14], Malaysia [12], Italy [15], or the United Arab Emirates [17]. Others—like Barhate and Dirani [6]—are literature reviews.

Regardless of the specialist scientific work carried out, virtually every text underlines the closeness of Gen Z to innovation and technology [18]. While their predecessors—Generation Y—might also be perceived as the ones who can function in the virtual world, Gen Z does not know the world without computers and technology. However, there are many differences between them and their predecessors. In comparison to Generation Y, the post-millennials are less 'me'-oriented [9]. At work, monetary motivation is not the most important aspect for them, as they demand respect from their employers [7]. At the same time, taking into account the variety of crises that surround them—especially climate change and its consequences—Gen Z representatives are supposed to be environmentally cautious. Not only do they show this in their consumer behavior when it comes to green marketing or eco-labeling [14], but they also want to emphasize their green choices to their peers [12]. On that note, Dragolea et al. even underline that “sustainable behavior” brings satisfaction to Gen Z representatives [19]. In the presence of social media, in which Gen Z is active, the projection of a green lifestyle can be even more visible. Even from a nutrition and farming perspective, they underline that the environment and respect towards animals are crucial when making consumer decisions [20]. The green decisions of Gen Z are also connected to sustainability awareness, as shown by Arora and Manchanda [21] in their study of the sustainable fashion choices of Gen Z. They emphasize a significant link between the green perceived value of apparel and Gen Z's intention to buy it. In another paper, it has been shown that environmental concerns positively affect Gen Z's intention to buy recycled clothing [22]. The willingness of Gen Z to behave more environmentally friendly and to have more sustainable clothing is also shown by Pradeep and Pradeep (2023) when they looked at students in UAE [17]. This goes hand in hand with a lot of research on ecological choices in society as a whole. For example, in the late XX century, Roberts and Bacon [23] showed that environmental consciousness makes people consume products that create less pollution, recycle more, and, in general, do their best to make more ecologically friendly decisions. Also, Straughan and Roberts [24] put emphasis on the fact that an individual's belief that she or he might play a role in fighting environmental devastation can play a role in the person's consumer behavior. Case studies do not only show the existence of more environmentally cautious consumers who are willing to change their behavior to less negatively impact the natural environment, but they also underline that better ecological knowledge influences pro-environmental behavior [25]. Similar results are presented by Mańkowska-Wróbel [26], who also emphasizes that the level of ecological cautiousness is one of the main factors motivating consumers to behave more pro-environmentally. Cong Doanh, Gadomska-Lila, and Thi Loan [27] similarly show that perceived environmental knowledge in the compared countries of Poland and Vietnam influences the willingness and objective to purchase environmentally friendly products. Kiba-Janiak, Cheba, Mucowska, and Oliveira [28] looked at Polish e-customers in terms of their delivery choices. They emphasize that price matters the most when it comes to which mode of delivery they choose. However, if the delivery is free, they tend to choose environmentally friendly transport modes. A study written, Grzybowska-Brzezińska [29] even underlines that only consumers with a higher level of environmental awareness can shape the ecological strategy of producers. On this note, Anna Matel [30], in her study on consumption, hints that Polish knowledge about ecology is low.

Summarizing, the literature on Gen Z's behavioral patterns concerning the environment shows that such a relation does exist. Representatives of that group put an emphasis

on green aspects when making consumer choices. This goes hand in hand with the perception that Gen Z is less ‘me’-oriented than their parents and grandparents. They tend to prefer sustainable fashion, choose more environmentally friendly products while shopping for food, and are willing to show their green behavior on their own social media. Generally, this can be stated about Gen Z as a group, without making country-based distinctions. Nevertheless, our research shows a lack of literature comparing the environmental consumer choices of Gen Z and their ecological cautiousness between the countries of the European Union. The comparative studies that we are aware of show the differences between countries that are culturally and geographically far apart (such as Vietnam and Poland). Moreover, the hitherto research does not focus on the horizontal aspect of the pro-environmental behavior of Gen Z, but rather on specific sectors (e.g., clothing or food). The aim of this paper is to fill this research gap, focusing on a more holistic approach towards green consumer choices between two European countries that—despite being neighbors—are different in the context of the economic development and ecological consciousness of their citizens.

3. Materials and Methods

This research was conducted simultaneously in two countries, and based on the fact that the daily actions of representatives of the target group are dominated by activities on the Internet—especially on social media [31]. Hence, it was decided that the best method of reaching participants and conducting the research in the selected group was through the use of the CAWI (Computer-Assisted Web Interviewing) method via a web form. Moreover, there are many advantages to using the CAWI method, such as the short time needed for research, having excellent control over the data collection process, the ability to react to respondents’ concerns, the low cost of the study, and the geographic spread of respondents [32].

The empirical research was carried out with the participation of representatives of Gen Z from Poland and Germany (sample of 163 Polish and 148 German consumers), born after 1996. We introduced random levels to distinguish the individuals (purchasers of ecological products), taking into account features characterizing separate individuals.

In order to facilitate the respondents’ participation in this study, and to avoid mistakes resulting from the possibility of a language barrier, the questionnaire was designed in Polish for the respondents from Poland and in German for the respondents from Germany. Before conducting the actual study, a pilot study was launched to examine the clarity of the questions asked and the layout of the questionnaire. In response to the feedback received from the participants of the pilot study, including minor comments regarding the correct understanding of selected questions, the questions were clarified before starting the main part of the study. The linguistic accuracy was also double-checked by a researcher whose native language was German. In each of the two countries, after the online pilot study, a trained native researcher was responsible for conducting surveys in schools and workplaces—appropriate for representatives of the Generation Z population.

Finally, the online questionnaire contained 20 questions and was distributed only to the group of people aged 18–25. The questionnaire first had a control question verifying the age of the participants, single- and multiple-choice questions, and demographic questions at the end. In addition, in the questions verifying the degree of acceptance of the studied phenomena and the views of the survey participants, a 5-point Likert scale was used. The Likert scale questions concerned undertaking specific pro-ecological activities in everyday life (the scale included answers ranging from ‘I have never encountered such an opportunity’ to ‘I always take part if possible’). This method was also used in other scientific texts, such as those written by Tomášková and Kaňovská [33], or Virglerova, Ivanová, Dvorský, Belas, and Krulický [34]. A total of 311 responses were then later subjected to further statistical analyses. In the process of the diagnosis of dependencies and identification of determinants of pro-environmental market behavior of Gen Z, structural modeling was used. The advantage of this data analysis method is that it can be used to analyze the

structure and strength of linear relationships between observable variables. It enables the identification and analysis of cause-and-effect relationships (such as regression and correlation) or covariance [35–40]. Calculations were made using IBM Statistics version 28 and AMOS software version 29. After the estimation of the tested theoretical model, detailed information on the quality of the model's fit to the empirical data was obtained. They are expressed by the results of the good-fit tests of the model (values of the model's validity and reliability) in relation to the data matrix testing it, e.g., FMIN, CMIN, DF [37,41–43]. The model fit tests are based on a comparison of the theoretical variance–covariance matrix with the sampled variance–covariance matrix. They indicate discrepancies between the theoretical and population variance matrixes [44].

4. Results

4.1. Differences in Market-Oriented Pro-Environmental Behavior between Consumers from Gen Z from Poland and Germany

Gen Z are active young consumers who much more often, compared to previous generations, present pro-environmental attitudes and show an interest in the state of the natural environment or declare a higher awareness of the level of degradation of the environment. This study addressed the problem of identifying the level of knowledge of young consumers concerning the natural environment, taking into account respondents from Poland and Germany. While diagnosing the respondents' assessment and perception of the current state of the natural environment in the world, significant differences were found between the representatives of Gen Z from Poland, among whom about 16% assessed this condition as good, and those from Germany, among whom this percentage was significantly lower and amounted to only about 6%. The surveyed young people from Germany and Poland, in the vast majority, negatively assessed the condition of the natural environment in the world. The surveyed respondents declared the implementation of pro-environmental behavior and wanted to undertake initiatives enabling their altruistic behavior in the field of environmental protection. The types of market behavior, in the context of their pro-environmental behavior, most frequently indicated by respondents are as follows:

- Using the possibility of buying food at lower prices in the last opening hours of shops/restaurants in order to prevent them from being thrown away (e.g., through mobile applications to save surplus food from restaurants, cafes, and shops)—33.8% of Germans vs. 26.2% of Poles;
- Participation in recycling campaigns carried out by clothing companies—23% of Germans vs. 23.2% of Poles;
- Purchase of products from special product lines, when part of the profit from sales is allocated to finance selected social and environmental campaigns—20.9% of Germans vs. 14% of Poles;
- Voluntarily adding a small amount to the order when shopping online, which the seller transfers to offset carbon dioxide emissions—17.6% of Germans vs. 8.5% of Poles;
- Voluntary allocation of an additional amount to reduce the carbon footprint when buying airline tickets—16.2% of Germans vs. 1.8% of Poles;
- Exchange of points collected in loyalty programs to support pro-ecological social campaigns—6.8% of Germans vs. 10.4% of Poles.

4.2. Involving Gen Z in Pro-Environmental Activities Undertaken by Producers and Service Providers When Making Purchase Decisions

In the diagnosis of the pro-environmental market behaviors of the surveyed respondents, a statistically significant link between the assessment of the natural environment by the respondents and the undertaking specific actions was shown (Table 1).

Table 1. Values of independence test χ^2 and v-Cramer coefficient for the relationship between respondents' pro-environmental market activities and their nationality.

Specification	Pearson's Chi-Square		V-Cramer	
	Value	Asymptotic Significance (Bilateral)	Value	Approximate Significance
When buying food products, I use the opportunity to buy food at lower prices in the last opening hours of shops/restaurants to prevent them from being thrown away (e.g., through applications like Too Good To Go)	329.148	<0.001	0.725	<0.001
When I buy a plane ticket, I spend an additional amount on reducing my carbon footprint	367.131	<0.001	0.766	<0.001
When I shop online, I add a small amount to my order, which the seller transfers to offset carbon emissions	322.952	<0.001	0.718	<0.001
I choose bank accounts without a plastic payment card	323.816	<0.001	0.719	<0.001
I take part in recycling campaigns conducted by clothing companies	317.800	<0.001	0.713	<0.001
I buy products from special lines, part of the income from which is intended to finance selected social or ecological actions	324.728	<0.001	0.720	<0.001
I use the option of returning old electronic equipment at the point of sale in exchange for a discount on the purchase of a new model	320.214	<0.001	0.715	<0.001
I exchange points collected in loyalty programs to support pro-ecological social campaigns	317.921	<0.001	0.713	<0.001
I take part in rounding the sum from the receipt to round amounts, if the seller transfers the difference to selected ecological and social actions	317.921	<0.001	0.713	<0.001

Source: Own elaboration using the AMOS package.

The obtained values of test χ^2 and the V-Cramer coefficient indicate that there is a statistically significant link between the nationality of the respondents and their pro-environmental behavior. In all cases, the value of the V-Cramer coefficient is higher than 0.7, which indicates a very strong link between pro-environmental behavior and the nationality of the respondents, with a significance of <0.001.

Why are additional pro-environmental behavioral patterns accompanying purchasing decisions more often undertaken by young consumers from Germany? The reason may be the difference in access to information on the possibility of undertaking such activities and/or the frequency of providing such services by producers and retailers operating in both countries. The biggest difference in declarations was shown in the case of allocating an additional amount to reduce the carbon footprint—over 80% of the respondents from Poland (vs. approx. 44% of the respondents from Germany) stated that they had not encountered such a possibility so far. About 60% of the German respondents and 53% of the Poles indicated that it is not possible to exchange points collected in loyalty programs to support pro-environmental social campaigns. The possibility of adding a small sum to an online order, which the seller transfers to offset carbon dioxide emissions, in the

opinion of about 52% of the surveyed Germans and about 60% of Poles is unavailable in their countries.

4.3. Factors Limiting Gen Z Consumers to the Greatest Extent in Undertaking Pro-Environmental Market Behavior

Among the barriers indicated by the Gen Z consumers as those that, to the greatest extent, limit their abilities to take pro-environmental actions (Figure 1), the respondents in both countries most often indicated the amount of their income (41.2% in Germany vs. 41.5% in Poland). In the case of the respondents from Poland, the high prices of organic products were also indicated much more often when compared to the Germans. This factor constituted a barrier for about 32% of the respondents from Poland and over 16% of the respondents from Germany. Taking into account the income indicators in both countries, these differences seem to be fully understandable. According to Eurostat data, in 2021, the average annual remuneration of full-time employees in Germany was EUR 44,404 per annum, while in Poland it was about three times lower and amounted to EUR 14,431 per annum [45]. The disproportion in the sales of organic products in the retail market in both countries is even higher. In Germany, the organic retail sales index in 2021 was EUR 15,870 million/EUR 191 per capita, while in Poland it was EUR 314 million/EUR 8 per capita [46]. The disproportion in the disposable income of consumers in both countries and the relatively greater ability of German consumers to purchase organic products—the prices of which are higher than non-organic substitute goods—is only one of the explanations of the observed trend. Moreover, the market for organic products in Western Europe is much larger, which, thus, results in the relatively lower price of many products from the organic sector [47]. The greater financial opportunities and the interest of German consumers in ecological products have made them more available and most often bought in supermarkets or discount stores [48]. According to the analyses of the Warsaw University of Life Sciences, more than half of Polish consumers shop for organic groceries at fairs and bazaars, 45% of respondents look for such products in discount stores, while 42% look in specialist eco-shops. Supermarkets and hypermarkets were at the bottom of this list [49].

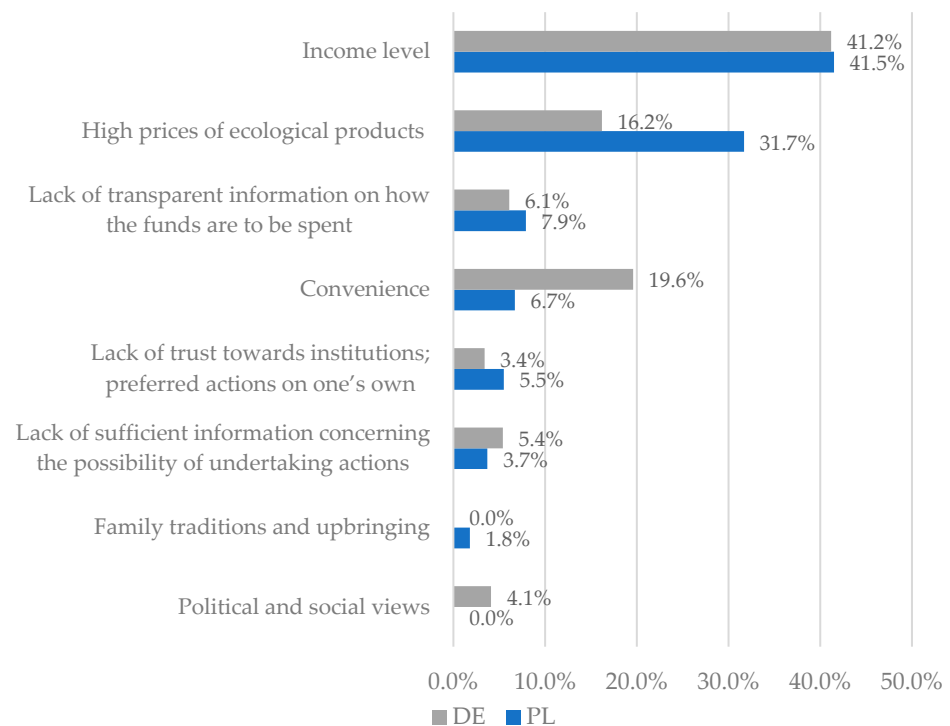


Figure 1. Factors limiting the possibility of undertaking pro-environmental actions by consumers from Gen Z from Poland and Germany. Source: The authors, based on their survey research.

A significant discrepancy was also shown in putting one's own convenience above undertaking pro-environment behavior, which was diagnosed in 19.6% of the consumers from Germany and only 6.7% of the consumers from Poland. One can explain this through the influence of the level of socio-economic development on the functioning of the individuals and their consumer decisions. As indicated by researchers analyzing macro-trends in consumer behavior in relation to socio-economic development, people with a lower income look for products offered under the so-called "more for less" offers, while consumers with higher incomes look for "more for more" offers. One of the macro-trends seen in highly developed countries is the growing interest in the quality of life [50]. Consumers with a higher disposable income are, therefore, more comfortable and less willing to make decisions that significantly limit their comfort. However, a higher disposable income allows them to make decisions on the market of pro-quality products. Ecological products, or products produced in an environmentally friendly way, count as such pro-quality goods.

In order to deepen the analysis of the correlation between the assessments of the current state of perception of the natural environment in the world and the factors limiting the respondents' pro-environmental behavior, structural modeling was used. The proposed model of the multiple regression link between the assessments of the current state of perception of the global environment and the factors limiting the pro-environmental behavior of the respondents, taking into account the socio-economic characteristics of the respondents, is shown in Figure 2.

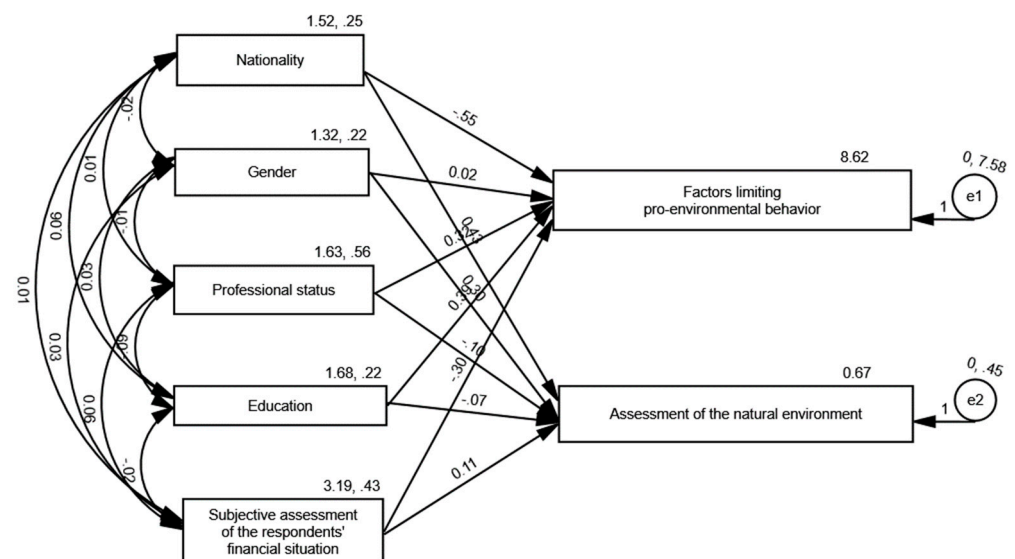


Figure 2. Relationship structure in the multiple regression model for the link between the assessments of the current state of perception of the environment in the world and the factors limiting the respondents' pro-environmental behavior (standardized coefficients). Source: Own elaboration using the AMOS package. RMSEA (RMSEA is the discrepancy between the theoretical and the population variance–covariance matrix, adjusted for the number of degrees of freedom. According to Konarski (2010), a value below 0.05 represents a good fit) = 0.000; FMIN = 0.000; NFI = 0.999; CFI = 1.000; RFI = 0.978; IFI = 1.008; TLI = 1.312.

The standardized values of the regression coefficients were placed in the path diagram of the dependency analysis (above the direction arrows). The standardized path coefficients (nationality and assessment of the natural environment) presented in Figure 2 indicate a positive relationship. A value of 0.43 means that a change in nationality indicates an increase in positive evaluations of the natural environment by 0.43 of a standard deviation. In the case of the relationship between nationality and the factors limiting pro-environmental behavior, we observed a negative relationship, which means that the impact of nationality on the assessments of the factors limiting pro-environmental behavior decreased by 0.55 of standard deviations. When assessing the quality of the model, it can be concluded that

it meets the criteria of acceptability [51–53]. The Hoelter value indicates that the sample size adopted for the construction of the model is sufficient. The CMIN/DF value of 0.088 (chi-square degrees of freedom (DF)) is within the acceptable range of up to 5. It is worth emphasizing that the CMIN/DF result is favorable in terms of the applicability of the model. The obtained values of the matching factors (RMSEA and CFI) prove that the proposed relationship model shows a good fit. The RMSEA value was 0.000 and CFI exceeded 0.95 (model CFI 1.000), which entitles the model to acceptance. When analyzing the other measures of fitting the path model, it can be concluded that they meet the statistical standards, and the model can be accepted.

The proposed model (Figure 1) was defined as a recursive model, which, in practice, means that the variables can affect not only other variables, but also themselves. Mathematically, this is only possible in terms of covariance.

The data presented in Table 2 show that there exist the following statistically significant correlations: The covariance between the respondent's professional status and education is negative, with a standard error of -4.400 ($p < 0.001$). A positive, statistically significant link is observed in the case of the respondents' nationality and education (covariance is 0.057 and standard error is 4.192 ($p < 0.001$)). The regression results (Table 3) indicate that there is a correlation between the nationality and the gender of the respondents with the assessment of the state of the natural environment.

Thus, nationality and gender differentiate the respondents' assessments of the current state of the natural environment in the world ($p < 0.001$). However, no statistically significant link was found between the characteristics of the respondents and the factors limiting the possibility of the consumers representing Gen Z to make pro-environmental decisions.

When verifying the declared behavior of the respondents, in the further part of this study, they were asked to assess the extent to which they would be willing to incur the additional costs related to the purchase of selected products that were created in an environmentally friendly manner. Consistently, more than 80% of the German respondents agreed that environmentally unfriendly products should cost more (Figure 3). Among the respondents from Poland, such opinions were declared by about 1/4 less of the surveyed representatives of Gen Z, when compared to their German counterparts.

Table 2. Covariance results for the link between assessments of the current state of perception of the environment in the world and the factors limiting the respondents' pro-environmental behavior.

			Estimate	S.E.	C.R.	<i>p</i>
Education	<-->	How do you assess your current financial situation?	−0.020	0.018	−1.102	0.271
Professional status	<-->	Education	−0.091	0.021	−4.400	***
Gender	<-->	Professional status	−0.010	0.020	−0.516	0.606
Nationality	<-->	Gender	−0.022	0.013	−1.671	0.095
Professional status	<-->	How do you assess your current financial situation?	0.059	0.030	1.999	0.046
Nationality	<-->	Professional status	0.014	0.022	0.666	0.505
Nationality	<-->	How do you assess your current financial situation?	0.006	0.019	0.311	0.756
Nationality	<-->	Education	0.057	0.014	4.192	***
Gender	<-->	How do you assess your current financial situation?	0.032	0.018	1.737	0.082
Gender	<-->	Education	0.026	0.012	2.077	0.038

Note: <-->—covariance dependence; ***—statistically significant coefficient at the significance level of $\alpha = 0.01$. Source: Own elaboration using the AMOS package.

Table 3. Regression results for the relationship between assessments of the current state of perception of the world’s environment and the factors limiting the respondents’ pro-environmental behavior.

Specification			Estimate	S.E.	C.R.	p
How do you assess the CURRENT state of the natural environment in the world?	<---	Nationality	0.432	0.080	5.384	***
Limiting factors	<---	Nationality	−0.547	0.328	−1.667	0.095
How do you assess the CURRENT state of the natural environment in the world?	<---	Gender	0.302	0.084	3.614	***
Limiting factors	<---	Gender	0.022	0.342	0.063	0.950
How do you assess the CURRENT state of the natural environment in the world?	<---	Professional status	−0.099	0.054	−1.817	0.069
Limiting factors	<---	Professional status	0.318	0.222	1.431	0.152
How do you assess the CURRENT state of the natural environment in the world?	<---	Education	−0.067	0.090	−0.747	0.455
Limiting factors	<---	Education	0.393	0.367	1.071	0.284
How do you assess the CURRENT state of the natural environment in the world?	<---	How do you assess your current financial situation?	0.108	0.061	1.770	0.077
Limiting factors	<---	How do you assess your current financial situation?	−0.302	0.249	−1.212	0.225

Note: <---regressive cause-and-effect relationship; ***—statistically significant coefficient at the significance level of $\alpha = 0.01$. Source: Own elaboration using the AMOS package.

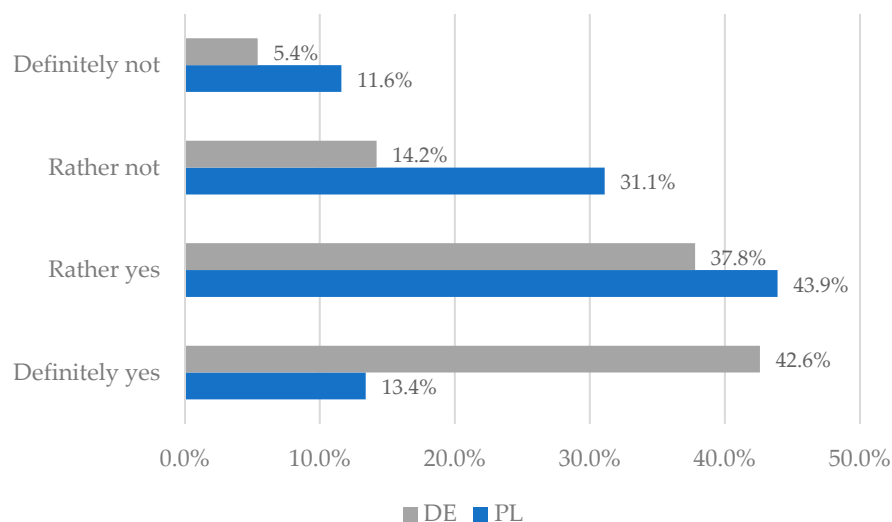


Figure 3. Declarations of the surveyed respondents from Germany and Poland regarding the acceptance of higher prices for environmentally unfriendly products. Source: The authors, based on their survey research.

Next, in the context of the research objective of this study, structural modeling (multiple regression) was carried out in order to demonstrate the statistically significant links between the variables, such as the factors limiting pro-environmental behavior, the assessment of the higher price of environmentally unfriendly products, and the characteristics of the respondents (Figure 4).

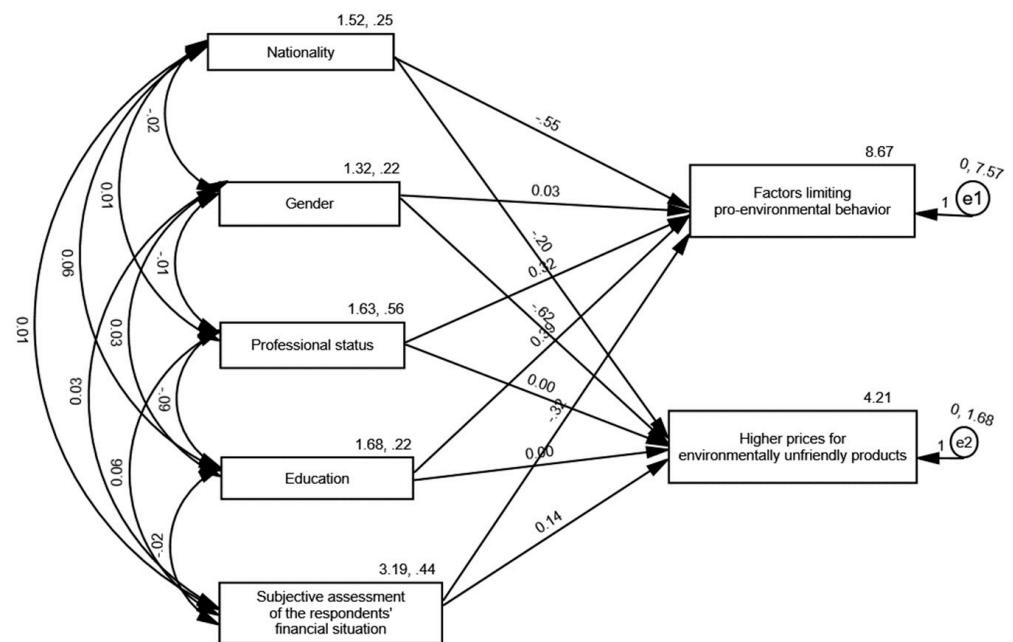


Figure 4. Relationship structure in the multiple regression path model for the link between the assessment of the higher price of environmentally unfriendly products and the factors limiting the respondents' pro-environmental behavior (standardized coefficients). Source: Own elaboration using the AMOS package. RMSEA (RMSEA is the discrepancy between the theoretical and the population variance–covariance matrix, adjusted for the number of degrees of freedom. According to Konarski (2010), a value below 0.05 represents a good fit) = 0.000; FMIN = 0.000; NFI = 0.695; CFI = 0.613; RFI = 0.978; IFI = 0.701; TLI = 1.844.

In the path model regarding the relationship between the assessment of the higher price of environmentally unfriendly products and the factors limiting the respondents' pro-environmental behavior, the standardized path coefficients (Figure 4) indicate a negative relationship between nationality and two. We observed a negative relationship, which means a reduction in the impact of nationality on the assessment of the higher price of environmentally unfriendly products and the assessment of the factors limiting pro-environmental behavior by 0.20 and 0.55 standard deviations, respectively. The proposed dependency model in the multiple regression path model for the link between the assessment of the higher prices of environmentally unfriendly products and the factors limiting the respondents' pro-environmental behavior meets the criteria of acceptability. The level of probability for the Chi-square statistics (Chi-square = 36.482 and DF = 1, $p = 0.000$) indicates the correctness of the proposed relationships. When assessing the quality of the model, it can be concluded that it meets the fit criteria and applicability of the model. From the point of view of the assumptions relating to the optimal values of the adjusted goodness indicators, the RMSEA and CFI had satisfactory values, prompting the conclusion that the proposed final model is a good match to the empirical data. The RMSEA was 0.000 and CFI was 0.613. When analyzing the other measures of fit of the path model, it can be concluded that they meet the statistical standards, and the model can be accepted. Tables 4 and 5 present the values of covariance and regression coefficients between the variables included in the modeling, respectively.

Table 4. Covariance results for the relationship between the assessment of the higher price of environmentally unfriendly products and the factors limiting the respondents' pro-environmental behavior (standardized coefficients).

			Estimate	S.E.	C.R.	<i>p</i>
Education	<-->	Financial situation assessment	−0.020	0.018	−1.094	0.274
Professional status	<-->	Education	−0.091	0.021	−4.398	***
Gender	<-->	Professional status	−0.010	0.020	−0.486	0.627
Nationality	<-->	Gender	−0.022	0.013	−1.671	0.095
Professional status	<-->	Financial situation assessment	0.060	0.030	2.028	0.043
Nationality	<-->	Professional status	0.015	0.022	0.681	0.496
Gender	<-->	Education	0.026	0.012	2.078	0.038
Nationality	<-->	Financial situation assessment	0.007	0.019	0.337	0.736
Gender	<-->	Financial situation assessment	0.033	0.018	1.820	0.069
Nationality	<-->	Education	0.057	0.014	4.193	***

Note: <-->—covariance dependence; ***—statistically significant coefficient at the significance level of $\alpha = 0.01$. Source: Own elaboration using the AMOS package.

Table 5. Regression results for the relationship between the assessment of the higher price of environmentally unfriendly products and the factors limiting the respondents' pro-environmental behavior (standardized coefficients).

	Specification		Estimate	S.E.	C.R.	<i>p</i>
Factors limiting pro-environmental behavior	<---	Nationality	−0.546	0.328	−1.663	***
Higher prices of environmentally unfriendly products	<---	Nationality	−0.202	0.155	−1.304	0.192
Factors limiting pro-environmental behavior	<---	Gender	0.026	0.342	0.076	0.940
Higher prices of environmentally unfriendly products	<---	Gender	−0.617	0.161	−3.830	***
Factors limiting pro-environmental behavior	<---	Professional status	0.319	0.222	1.435	0.151
Higher prices of environmentally unfriendly products	<---	Professional status	0.004	0.105	0.041	0.967
Factors limiting pro-environmental behavior	<---	Education	0.390	0.367	1.065	0.287
Higher prices of environmentally unfriendly products	<---	Education	−0.003	0.173	−0.017	0.986
Factors limiting pro-environmental behavior	<---	Financial situation assessment	−0.319	0.249	−1.282	0.200
Higher prices of environmentally unfriendly products	<---	Financial situation assessment	0.144	0.117	1.231	0.218

Note: <--->—regressive cause-and-effect relationship; ***—statistically significant coefficient at the significance level of $\alpha = 0.01$. Source: Own elaboration using the AMOS package.

The determined model parameters between the assessment of the higher price of environmentally unfriendly products and the factors limiting the pro-environmental behavior of the respondents indicate that nationality differentiates the factors limiting the possibility of undertaking pro-ecological actions by the consumers from Gen Z at the significance level of $p < 0.05$. The answers to the question: “Do you think that environmentally unfriendly products should cost more?” are differentiated at a statistically significant level ($p < 0.001$) by the gender of the respondents.

5. Discussion

In reference to the research questions formulated at the beginning, one may state that the results of our study generally correspond to the previous research on Gen Z. They also show that the majority of post-millennials do not believe that the natural environment is in good condition and that something should be done about it. This is the part of the “we-generation” attitude that has been emphasized by various scholars. As shown by Arora and Manchanda [21], Bogueva and Marinova [20], and Song, Qin, and Qin [14], environmental awareness can be seen to impact the consumer behavior of Gen Z. Most of the studies on the behavior of post-millennials are case studies focusing on the same nationality. What, however, our case study emphasizes is that this influence is not the same across borders. This is one of the main added values of this text. The German youth are, basically, more conscious when it comes to the environment and believe that the less environmentally friendly products should cost more. Basically, German Gen Z is more willing also to bear higher costs in order to minimize, or positively influence, their consumer choices’ impact on the environment.

Just like the previous literature on Gen Z’s behavioral patterns concerning the environment, this study also shows that such a relation does exist. The representatives of that group put emphasis on green aspects when making consumer choices. At the same time, as Mańkowska-Wróbel [26] showed, we provide more evidence that ecological consciousness positively influences the willingness to act more pro-environmentally.

Similar trends were observed in a study on the readiness of representatives of Gen Z to incur the additional costs related to participation in entrepreneurial initiatives in the field of corporate social responsibility (CSR) to a wide extent (not only in the field of environmental initiatives). It was conducted in 2020 among students from the UK and Czechia. In that study, the willingness to support companies’ CSR activities was clearly higher among the English Gen Z respondents. Moreover, they were fully ready to support even smaller CSR activities, while the Czech student group only wanted to support large-scale initiatives [3].

Taking into account the results of the studies by Fraj-Andrés and Martínez-Salinas [25], as well as Mańkowska-Wróbel [26]—which show that the availability of better environmental information in the society and higher ecological awareness of the society influence the pro-environmental behavior of consumers—these results can also be confirmed in the presented article. Connecting such results to the level of ecological behavior discourse in Germany and Poland, it can be preliminarily noted that, in a country where ecology and pro-environmental behaviors are discussed less (Poland), less activity, habits, and social pressure for greener activities can be observed. The lower environmental awareness in Poland, which is mentioned by Matel [28], may be a consequence of the results of the conducted (market) research. This research could identify a lower activity of Gen Z from Poland in the field of pro-environmental market behavior or its representatives’ awareness of the degradation of the natural environment in the world.

The reasons for these differences can also be found in the policies adopted by governments in the context of CSR across Europe. The available research shows the effects of the delay in starting CSR-related activities between the 15 “old” European Union Member States and the countries that joined the European Union after 2004. As Steurer, Martinuzzi, and Margula emphasize in their research, countries in the transformation phase in the Central and Eastern European region are clearly less active in promoting CSR activities than the Western European, Anglo-Saxon, and Scandinavian countries [54]. Hence, one could

presume that it is the level of environmental information, education, and perhaps even the GDP per capita that have an impact on Gen Z's environmental consumer choices. However, taking into account the limits of a case study method, the next scientific step would be to see whether—for example—higher GDP really influences more pro-environmental choices for Gen Z, at least in the European Union. Finances, at the end of the day, were pointed to as one of the main barriers to green behavior from a consumer perspective and are underlined as a factor that influences environmental consumer actions by Grzybowska-Brzezińska [29]. Research on consumer behavior may face limitations related to sample size, time constraints, limited access to data, ethical considerations, the impact of social desirability biases, and the complexity of consumer behavior [55]. The main limitation of this study, apart from the sample size, is the difficulty in distinguishing between the consumers' declared behavior and the behavior that they actually demonstrate in everyday life. The complex nature of consumer behavior and rapidly changing trends may contribute to the lack of comprehensive insight into consumer behavior. However, understanding consumer behavior is crucial for businesses and policy makers to develop effective strategies and policies; therefore, further research in this area is necessary.

6. Conclusions

This study attempted to diagnose the conditions of the market behavior of Gen Z consumers, taking into account the pro-environmental aspects of their decisions. We bear in mind the characteristics of Gen Z and their importance in the process of building the future; furthermore, we consider this generation as the executors of the Sustainable Development Goals in Europe and in the world. Hence, we believe that it is crucial to search for effective tools to build a responsible EU society, of which Gen Z representatives are also a part. Therefore, it is necessary to diagnose the involvement of young people in pro-environmental behavior and to define the patterns of market behavior that the representatives of Gen Z present.

This research showed the differences in terms of the attitudes and declarations of pro-environmental market behavior among Gen Z from Poland and those from Germany. Nationality and gender differentiate the respondents' assessments of the current state of the natural environment in the world. The surveyed representatives of Gen Z from Germany and women are definitely more aware. However, no statistically significant link was discovered between the respondents' characteristics and the factors limiting the possibility of making pro-ecological decisions concerning their activities. Nationality differentiates the acceptance of a higher price of environmentally unfriendly products. While the respondents from Germany positively assess this proposal, the respondents from Poland are more skeptical. The possibility of introducing such a solution was indicated by about 1/4 fewer respondents from Poland, compared to their German counterparts.

In the study of the pro-environmental market behavior of the surveyed respondents, a statistically significant link was found between the respondents' assessment of the state of the natural environment and their involvement. This involvement can be shown by using the possibility of buying food at lower prices in the last opening hours of shops/restaurants in order to prevent it from being thrown away (e.g., via mobile applications to save surplus food from restaurants, cafes, and shops), participation in clothes recycling campaigns conducted by clothing companies, and the purchase of products from special product lines (when a part of the profit from the sales is used to finance selected social and environmental campaigns). The nationality of the respondents also differentiates the intensity of conducting the different types of pro-environmental market behavior discussed above. The respondents indicate that the offer of pro-environmental actions proposed by producers or traders is too small and point to the lack of possibilities to make conscious consumer decisions that would take into account their pro-environmental, ecological, or sustainable lifestyle and consumption patterns.

This study highlights the intra-EU differences between neighbors in the context of the new pro-environmental priorities of the European Commission and at a time of growing

youth environmental movements being observed in EU countries. Gen Z, being digitized and preferring both virtual communication and consumption, is willing to accept global trends; however, this is not a uniform segment in terms of pro-environmental attitudes. If such a phenomenon is diagnosed among Gen Z representatives from other EU countries, it will be difficult to assess the behavior standards and efficiently implement the Sustainable Development Goals. Therefore, social education and shaping the behavior of young consumers are necessary, especially in those countries where the ecological awareness of society is at a low level.

Due to the limited size of this research sample, and the fact that the research was conducted in two EU countries, it is necessary to make further representative inquiries in the future, taking into account the size of the sample and the number of countries. The main aim of further research should be to identify the differences and similarities in the pro-environmental attitudes and behavioral patterns of Gen Z. It is also necessary to find effective tools to support the achievement of sustainable consumption goals in this generation.

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