

ENVIRONMENTAL AWARENESS OF GENERATIONS  
AND SUSTAINABLE PRODUCT DEVELOPMENT:  
THE WAY TOWARDS A GREEN FUTURE



GENERÁCIÓK KÖRNYEZETVÉDELMI TUDATOSSÁGA ÉS FENNTARTHATÓ  
TERMÉKFEJLESZTÉS: A ZÖLD JÖVŐ FELÉ VEZETŐ ÚT



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**E**nvironmental protection is one of the most significant challenges of our time, becoming increasingly urgent due to the growing population and consumption. This study examines the environmental awareness of different generations, particularly Generation Z, and highlights gender differences. The online questionnaire survey analyzed the opinions of 427 respondents living in the Northern Great Plain region, of whom 367 belonged to Generation Z (148 men, 219 women) and 57 to Generations X and Y. The study also investigated Generation Z's attitudes toward activities aimed at mitigating climate change, with comparisons across genders and generations. On a 1-to-5 Likert scale (1 = not important at all, 5 = extremely important), Generation Z ranked selective waste collection (average = 4.37), avoiding food waste (average = 4.21), and conscious energy use (average = 4.17) as the most important. Women rated environmentally conscious activities, such as using recycled paper and choosing products with less packaging, significantly higher than men ( $p \leq 0.05$ ). Comparative analysis showed that Generations X and Y considered nearly all climate protection activities more important than Generation Z ( $p \leq 0.05$ ), likely due to higher levels of knowledge about energy-saving solutions. Education and family environment play a key role in shaping environmental values. Despite generational differences, Generation Z also prioritizes waste reduction and considers climate protection aspects in their purchasing decisions. The study additionally presents the development of a sustainable soft drink that incorporates environmental considerations and offers an innovative packaging solution to minimize waste.

**KULCSSZAVAK:** Z-generáció, Fenntarthatóság, Vásárlási szokások, Környezettudatosság, Fogyasztói magatartás, Etikus fogyasztás

**KEYWORDS:** Generation Z, Sustainability, Purchasing habits, Environmental awareness, Customers behaviour, Ethical consumption

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## 1. INTRODUCTION

Sustainability and environmental awareness have become increasingly prominent in the global society in recent decades. Climate change, the diminishing of natural resources and the consequences of pollution have all forced consumers and companies alike to rethink their purchasing habits and business practices. Particular attention is focused to Generation Z in this area, a generation that has not only grown up in a digital world, but has also entered adulthood at an age when sustainability issues are commonplace. The buying habits and attitudes of Generation Z can be particularly important in promoting sustainable development, as these attitudes can play a crucial role not only at an individual level, but also in shaping future economic trends and corporate strategies. The aim of our research is to explore the environmental purchasing habits of Generation Z and to investigate the extent to which sustainability issues influence their everyday decisions.

Investigating Generation Z from the perspective of sustainability is in a unique position. Not only have they been raised in a world of digital technologies, but they also have easy access to information on global issues via the internet. This generation often differs from its predecessors regarding their emphasis on ethical and sustainable consumption and their preference to support brands that are committed to environmental and social responsibility. In addition, Generation Z members often expect companies to be transparent about their sustainability practices and are willing to pay more for products that are made in an environmentally friendly way.

On the other hand, it is important to note that environmental behaviour does not always reflect consumption patterns. Research often indicate that while Generation Z members greatly value sustainability, other factors such as price, convenience and brand image have a significant influence on their actual purchasing decisions. As a result of this, companies need to understand the motivations and expectations of Generation Z thoroughly in order to build an effective relationship with this consumer group

and offer sustainable products which are truly attractive to them.

Our current research examines the attitudes and purchasing habits of Generation Z towards sustainability in the light of these challenges. Our aim is to explore to what extent and in what ways sustainability concerns influence this generation and how they may shape future consumer trends. Our findings can contribute to the development of companies' sustainability strategies and help decision-makers to better understand the motivations and expectations of Generation Z.

## 2. LITERATURE REVIEW

The environment is a key issue today, and it is extremely relevant as we face many challenges and threats to the future of our planet. The growth of our planet's population also means growing consumption. More and more agricultural and food products are needed, but as the population grows, so does the demand for other goods (e.g. clothes, shoes, electronics, etc.). The production of different goods and services requires more and more raw materials and energy, which increases pollution. Tourism industry is also a major polluter due to travelling, thus, it is important to develop it sustainably and make it greener (FANNI and REZAZADEH, 2018; KUQI, 2018; FORLEO et al., 2017; KISS and TÓTH, 2016; LE et al., 2023). Climate change and global warming are the results of pollution (greenhouse gas emissions).

One of the most important values is health which can only be preserved if elements of the natural environment can be conserved. Several studies report that air pollution is increasing the number of children and adults worldwide suffering from respiratory diseases, asthma and allergy (ASHER et al., 2020; SINGH et al., 2022), as well as there seems to be an increase in our population (MÜLLER et al., 2018a,b).

Several studies confirm that consumers both adults and children who know more about the environment, sustainability, renewable energy sources or other green solutions are more environmentally conscious and

more willing to make efforts to protect the environment and the nature and to support the green transition (SZAKÁLY et al., 2020; PÁLINKÁS et al., 2022; KISS et al., 2016; LAOUES-CZIMBALMOS et al., 2019).

The European Union has set a target of achieving carbon neutrality by 2050 (BALOGH, 2020), and the European Union and Hungary have launched several strategies and initiatives to promote green economy, environmental protection and the fight against climate change (DUNLAP and McCRIGHT, 2015). The European Union announced the European Green Deal in 2019, which sets ambitious targets for climate change, environment protection and sustainability. The agreement aims to achieve carbon neutrality in the EU by 2050 and to reduce carbon emissions by 2030. The European Green Deal is part of an action plan called the 'New Green Deal' which includes measures in a number of areas such as energetics, transport, agriculture and industry (FETTING, 2020). In our country, too, various strategies and programmes support sustainability in different areas, such as energy efficiency, transport, education and economy. These programmes include the Climate and Energy Strategy 2030, the Energy and Climate Action Plan 2021-2030, the Green Genius Programme, the Operational Programme for Climate Protection and Energy Efficiency (OPECCP), the Green Kindergarten Programme, the Eco-Schools Programme, etc. However, it is not only the role of the state that has a crucial responsibility to protect our environment, but also the role of economic operators, companies, which damage the environment with pollutants during the production of products. One possible area is if the energy required for production is supplied by renewable energy sources. Or another good example is the circular economy model, which can not only solve environmental problems but also bring economic, social and health benefits (BRODNY and TUTAK, 2020). Recycling and a more sustainable use of resources can contribute to a sustainable future. There seem to be several examples of success of circular

economy models in Hungary. The following example focuses on the 'Zero Waste Hungary' programme: the Zero Waste Hungary programme is an initiative launched by a civil society organisation to raise awareness of the importance of waste prevention and waste minimisation in Hungary. The programme includes a number of important sub-programmes, including the promotion of environmentally responsible lifestyles, support for the plastic-free movement and the promotion of waste recycling and reuse. It also promotes the concept of Business Zero Waste. The idea is that businesses reduce the amount of waste they produce and minimise unnecessary packaging.

### **3. MATERIAL AND METHOD**

The aim of our research was to investigate the environmental awareness and commitment to sustainability among Generation Z and Generations X and Y, with a special focus on purchasing habits and attitudes towards environmentally conscious product development (TÓTH, 2024). A further goal of this research is to use the findings to develop a sustainable product development concept that is in line with the environmental values and preferences of the target group.

#### **3.1. Research Sample and Data Collection**

The research involved a questionnaire survey, which was distributed online to groups of secondary school students, university students and employees in the Northern Great Plain region. The questionnaire was filled in by 427 respondents, of which 367 belonged to Generation Z (148 men, 219 women) and 57 to Generations X and Y. Although the sampling procedure did not provide a representative sample, the high number of items filled in allows us to infer trends and correlations from the results.

### 3.2. Questionnaire and Measurement Instruments

The questionnaire consisted of several sections covering different topics:

Attitude and knowledge about the environmental awareness: Questions about respondents' environmental knowledge, their commitment to sustainability and how important they consider environmental measures to be in their daily lives.

Purchasing habits: mapping respondents' purchasing habits, particularly focusing on the choice of environmentally friendly products and recycling and waste reduction practices.

Tackling climate change: Respondents were asked to rate the followings on a Likert scale of 1 to 5: the importance of various environmentally conscious activities, such as separate waste collection, efforts to avoid food waste and the conscious use of electricity.

In the final part of the questionnaire, demographic data were collected from respondents, including gender, age, education and occupation.

### 3.3. Data Processing and Analysis

The collected data were analysed using SPSS 26.0 statistical software. The following statistical methods were used to process the data:

Basic statistical analysis by calculating mean, standard deviation and distribution for different variables.

Independent samples t-test: to test for differences between groups (Generation Z vs. Generation X, Y; men vs. women).

Correlation test: to explore the differences in attitudes between generations and genders in the area of environmental awareness and to analyse the relationship between knowledge and attitudes.

### 3.4. Product Development Concept

Based on the results of the analysis, we developed a concept for the development of a sustainable soft drink product. While designing the product, the respondents' environmental behaviour and preferences were taken into account in particular the need for packaging-free and recyclable materials. The soft drink will be sold in a metal bottle that can be reused and refilled, thus reducing waste production. The product is designed to be successful in the market and attractive to the target group, taking into account the elements of the 4P marketing mix (product, price, place, promotion).

### 3.5. Interpretation of the Results

We interpreted the results of the data analysis in the context of the challenges and opportunities in the field of environmental behaviour and product development. The results of the research have contributed to the development of a product development strategy that not only meets consumers' demands but also actively contributes to building a sustainable future.

## 4. RESULTS

A number of statements were listed while tackling climate change was discussed that respondents were asked to rate on a scale of 1 to 5 (where 1 = not at all important and 5 = totally important) how important they consider the activity to make efforts against climate change. Generation Z responses and gender differences are illustrated in *Table 1*.

**TABLE 1**  
**Gender Rating of Generation Z's Key Activities in the Struggle Against Climate Change on a 1 to 5 Likert Scale**

Which of the following do you consider important in the fight against climate change?	Generation Z-men average (standard deviation)	Generation Z-women average (standard deviation)	Total response values of Generation Z	Independent t test based significance level
Selective waste collection	4.28 (0.95)	4.44 (0.72)	4.379 (0.83)	no significant differences
Preventing food waste (by not throwing food away, buying only as much as needed)	4.09 (0.96)	4.3 (0.92)	4.21 (0.94)	p=0.04
Use of renewable energy sources (wind, solar, thermal water, etc.)	4.01 (1.16)	3.96 (1.04)	3.98 (1.09)	p=0.043
Purchasing a compact light source instead of a traditional light bulb	3.92 (1.11)	3.41 (0.95)	3.41 (1.01)	no significant differences
Conscious use of electricity (lights are not on, computers are not on etc. when not necessary)	3.91 (1.01)	4.35 (0.83)	4.17 (0.90)	p=0.000
Taking efforts to choose products that produce less waste, e.g. refillable products or products without packaging	3.77 (1.16)	4.07 (0.93)	3.89 (1.12)	p=0.008
In case something goes wrong you try to fix it	3.79 (1.03)	4.02 (0.96)	3.93 (0.99)	p=0.034
Conscious shopping (buy only what you need)	3.75 (1.11)	4.02 (1.08)	3.91 (1.10)	p=0.020
Using recycled paper	3.71 (1.21)	4.00 (1.03)	3.98 (1.09)	p=0.014
Going to work or school by bicycle	3.51 (1.3)	3.4 (1.1)	3.45 (1.2)	no significant differences
Use a paper bag instead of a plastic bag	3.47 (1.19)	4.00 (1.01)	3.78 (1.11)	p=0.000
Use of a modern car	3.31 (1.25)	3.4 (1.11)	3.36 (1.16)	
Disconnecting electrical equipment after use	3.31 (1.18)	3.85 (1.08)	3.36 (1.16)	p=0.000
Preference of organic products	3.11 (1.17)	3.25 (1.14)	3.19 (1.16)	no significant differences
Use of local transport in the municipality	2.99 (1.34)	3.22 (1.23)	3.13 (1.28)	no significant differences
Also purchasing second-hand clothes	2.68 (1.2)	3.28 (1.28)	3.04 (1.26)	p=0.000

Notes: 1= not at all important, 2= slightly important, 3= moderately important, 4= important, 5= fully important

Generation Z responses show that selective waste collection (mean=4.37, sd=0.83) is the most important, followed by preventing food waste (mean=4.21, sd=0.94) and conscious use of electricity (mean=4.17, sd=0.9). Conscious shopping (mean=3.91, sd= 1.1), recycled energy sources (mean= 3.98, sd= 1.09) and using recycled paper (mean= 3.98, sd= 1.09) are also important to them. Also scoring around a high average of 4 were "Tries to choose a product that produces less waste, e.g. refillable product or no packaging" (mean=3.89, sd=1.12) and using paper bags instead of plastic bags (mean=3.78, sd=1.11). The other responses – compact

lighting, bicycles, local transport, modern cars, using second-hand clothes or organic food, or repairing products – are also important to them in terms of protecting the environment as they also scored above average. This means that these factors are considered more important than average. These results reflect and confirm the importance that Generation Z consider waste reduction and recycling to be very important, which are also strongly indicated in their purchasing decisions. We compared the responses of Generation Z by gender using a t-test and found a significant difference in the p-value for several responses (Table 1).

Male respondents rated renewable energy sources (wind, solar) as more important in the struggle against climate change, as they rated this statement at 4.01 (sd=1.16) on average, while women rated it at 3.96 (sd=1.04) on average ( $p=0.043$ ). However, several statements such as conscious use of electricity, recycled paper, packaging-free products, electricity disposal, preference for paper bags,

conscious shopping, reducing food waste, buying second-hand clothes, consumption of organic products tended to be rated significantly higher by female respondents ( $p\leq 0.05$ ).

The responses of Generation Z and their elders (Generations X, Y) have been compared and are illustrated in *Table 2*.

**TABLE 2**

**Assessment of Generation Z's and Generation X, Y's Activities in the Struggle against Climate Change on a 1 to 5 Likert Scale**

Which of the following do you consider important in the fight against climate change?	Generation Z average (standard deviation)	Generations X, Y average (standard deviation)	Independent t-test
Selective waste collection	4.38 (0.83)	4.77 (0.59)	$p=0.000$
Preventing food waste (by not throwing food away, buying only as much as needed)	4.21 (0.94)	4.43 (0.72)	no significant differences
Conscious use of electricity (lights are not on, computers are not on etc. when not necessary)	4.17 (1.00)	4.74 (0.58)	$p=0.000$
Using recycled paper	3.98 (1.09)	4.39 (1.05)	$p=0.001$
Use of renewable energy sources (wind, solar, thermal water, etc.)	3.98 (1.09)	4.13 (1.30)	no significant differences
In case something goes wrong you try to fix it	3.93 (0.99)	4.29 (0.93)	$p=0.008$
Conscious shopping (buy only what you need)	3.91 (1.10)	4.37 (0.81)	$p=0.002$
Taking efforts to choose products that produce less waste, e.g. refillable products or products without packaging	3.89 (1.12)	4.35 (1.00)	$p=0.007$
Use a paper bag instead of a plastic bag	3.78 (1.11)	4.53 (0.70)	$p=0.000$
Going to work or school by bicycle	3.45 (1.20)	3.58 (1.31)	no significant differences
Purchasing a compact light source instead of a traditional light bulb	3.41 (1.01)	4.36 (0.87)	$p=0.000$
Disconnecting electrical equipment after use	3.36 (1.16)	4.3 (0.84)	$p=0.000$
Use of a modern car	3.36 (1.16)	4.06 (0.89)	$p=0.000$
Preference of organic products	3.19 (1.16)	3.37 (1.21)	no significant differences
Use of local transport in the municipality	3.13 (1.28)	3.56 (1.35)	$p=0.024$
Also purchasing second-hand clothes	3.04 (1.26)	3.63 (1.18)	$p=0.001$

Notes: 1= not at all important, 2= slightly important, 3= moderately important, 4= important, 5= fully important

Thus, it can be said that in the struggle against climate change, activities such as selective waste collection, conscious use of electricity, conscious shopping, fighting food waste, using renewable energy, etc. are considered more important by generation Y, X, as in all cases they gave higher average scores compared to generation Z and the difference was significant for almost all answers ( $p\leq 0.05$ ), see *Table 2*. Secondary research (SZAKÁLY et al., 2020) has shown that those with higher education

or more knowledge about the subject area are more committed to environmental protection. So we were curious to see if this could be the reason for the differences in the responses of generations Z and X, Y. The results are shown in *Table 3*, where it is revealed that Generation X, Y admits to having significantly higher knowledge of energy conservation solutions (mean=4.64, sd=0.55) than Generation Z (mean= 4.14, sd=0.84) ( $p=0.001$ ).

**TABLE 3**

**Trends in Generation Z and Generation X, Y's Knowledge of Energy Conservation and their Perception of the Importance of Energy Saving Solutions on a Likert Scale of 1 to 5**

Questions about energy conservation	Generation Z average (standard deviation)	Generations X, Y average (standard deviation)	Based on t-test
To what extent are you aware of energy saving solutions?	4.14 (0.84)	4.63 (0.55)	p=0.001
How important are energy-saving solutions to you?	3.59 (0.97)	3.96 (0.79)	p=0.000

Notes: 1= not at all important, 2= slightly important, 3= moderately important, 4= important, 5= fully important

Therefore, energy saving solutions are also considered significantly more important for generation X, Y than generation Z. The transfer of knowledge is also important at school level, however, the family as the scene of secondary socialisation can also play a role in this by shaping values. Moreover, not only school education, but also informal learning should not be forgotten, where members of the older generation have an advantage, as they can also broaden their knowledge of environmental protection and energy saving through their travels, work experience and everyday activities. At the same time, Generation Z members already consider almost all climate change activities to be important and take them into account in their purchasing decisions.

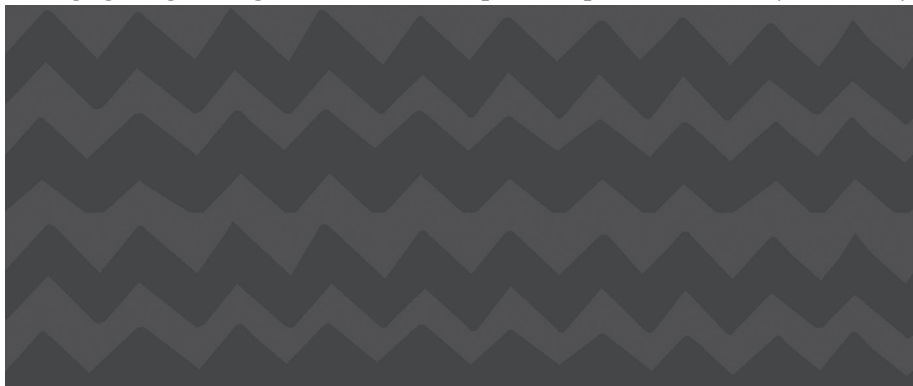
#### **4.1. Product Development based on Primary and Secondary Research**

We would like to produce a soft drink. The marketing mix is based on the 4Ps (product, price, place, promotion), according to which we are presenting our product development idea

(SINGH, 2012; BAUER and BERÁCS, 2006). The product: a soft drink available in different fruity flavours. However, the packaging of the product is important from an environmental point of view, as there are many articles about the harm of non-degradable micro-plastic pollution with plastic pet bottles (ZHOU et al., 2021; GUO et al., 2022; PRATA et al., 2019). The research also confirms that there seems to be an effort to prioritize packaging-free or recyclable materials by respondents. Thus, it was thought that the soft drink would be filled in a metal soda can as it can be recycled unlimited number of times, would not produce the traditional thin metal soda cans, as they are not durable and reusing them requires energy. Like a metal canteen, it will be packaged in a reusable, durable version. Its refill will be a balloon soda dispenser, with the balloon also featuring the product's colour shades and brand name. The refillers will be placed in school canteens, shops, hotels, etc. We designed a designer packaging for the soda can (*Images 1, 2, 3*).

#### **IMAGE 1**

**Packaging Design, Background, Shades of Purple: The Epitome of Creativity and Luxury**



Source: Designed by Tóth, 2024

**IMAGE 2**

**Image of the Packaging, with Brand Name**



Source: Designed by Tóth, 2024

**IMAGE 3**

**The Covering on the Can**



Source: Designed by Tóth, 2024

We chose bright colours for the product packaging which attracts customers' attention and is one of the tools for sales promotion. As 80% of impulse purchases are influenced by colour, because colour is also a way of communicating information. Furthermore, a study by Szilágyi et al. 2022 among Generation Z (university students), which investigated soft drink purchases using questionnaires and

eye-camera research, confirmed that young people spend time on and pay attention to brand names when buying (SZILÁGYI et al., 2022). Then it is the colour and attention-grabbing colours or such labels that attract their attention. Thus, the brand name Volt is a symbol of strength and also attracts the eye with its prominent colour shade, and the background is also colourful and attractive.

The soft drink is initially priced with a discounted introductory price to encourage people to try the product. Then a higher skimming price is going to be offered as the canteen contains a refill product that has a monopoly in the market based on the product characteristics of the packaging. We plan to sell it in shops, stores, buffets, online space (e-commerce).

We are going to apply advertising and sponsorship for promotion (sales promotion). In promotion its fruity, vitamin-content and health-supporting low-sweetened characteristics will be emphasized that makes it available for thirst-quenching. The packaging of the product is justified by the fact that soft drinks are such products that are consumed regularly. It is therefore an area where the quantity of waste from the various bottles and packaging materials can be reduced to a large extent.

## **5. CONCLUSIONS**

The results of the research revealed that although environmental thinking and behaviour is prominent among Generation Z members, environmental awareness is significantly higher among Generation X and Y members. Generation Z tends to buy environmentally friendly products and make choices that prioritise sustainability. This trend is in line with international research showing that younger generations, in addition to generations X, Y, are also more receptive to environmental issues and committed to sustainability.

The results also indicate that women are more likely to be environmentally conscious, especially when making purchasing decisions, which is confirmed by other international research (ZURAI DAH et al., 2012; ZABKAR and HOSTA, 2013; KAWGAN-KAGAN, 2020; LUKÁCS et al., 2023). This finding is consistent with previous studies that show that women make ethical and sustainable decisions more often and are more likely to choose environmentally friendly products.

An important finding of this research is that although Generation Z is generally committed to sustainability, as confirmed by other research (MANUCOM et al., 2023; DIETERLE et al., 2023; PRAMESWARI and SUYANTO, 2023), there seem to be still challenges in wider adoption of environmentally conscious products. Several of the respondents indicated that sustainable products are often more expensive, which is a barrier to their purchasing decisions. This highlights the key factor in sustainable product development and market uptake, which is the development of a competitive price.

The concept of the sustainable soft drink product developed in this research meets the environmental attitudes and preferences of Generation Z. The attention-grabbing packaging is a way to attract their interest, which has been proven by national researchers (SZILÁGYI et al., 2022). The metal can solution not only aims at waste reduction, but also offers a practical and trendy product that can appeal to the younger generation. However, it is important to note that in order to successfully introduce the product, companies need to take into account the price sensitivity of consumers and ensure that the product is affordable for the target group.

The data also showed that Generation Z places a high priority on corporate social responsibility (CSR) and the credibility of sustainability communication, which has been confirmed by other research (PELIKÁNOVÁ and MacGREGOR, 2020; SAWICKA and MARCINKOWSKA, 2023). Young consumers expect companies to communicate their environmental efforts transparently and consistently, and to avoid greenwashing, i.e. practices that appear environmentally friendly but are not sustainable. This suggests that, in addition to developing sustainable products, companies should pay particular attention to credible and ethical communication and green marketing (McEACHERN and CARRIGAN, 2012).

The results of the research show that there is a growing demand for sustainable products among Generation Z, and that environmentally conscious product development can be successful in the long term if products match the values and financial means of young consumers. There is also a gradual shift towards sustainability among generations X and Y, indicating that sustainability strategies can be relevant not only for young people but also for the wider consumer population.

## 6. RESEARCH LIMITATIONS

Although the research has provided valuable insights into the environmental purchasing habits of Generation Z, there are some limitations that need to be taken into account. Firstly, the sample size and composition may limit the generalisability of the results, as the majority of respondents were university students in Hungary, which may not reflect the full spectrum of Generation Z on a global level. In addition, the study used a self-report questionnaire, which could potentially affect the results due to the willingness to conform to social expectations. Finally, although the research explored the environmental awareness and attitudes towards sustainability of Generation Z, it did not explore in depth the external factors influencing individual behaviour, such as the economic situation or market supply. These limitations suggest that further research is needed to gain a deeper understanding of the issue and to confirm the results.

## 7. SUMMARY

This research examined the environmental purchasing habits and preferences of Generation Z, with a focus on the concept of a sustainable soft drink product. Our results showed that members of Generation Z are highly receptive to sustainability and environmentally conscious behaviour. This generation actively seeks products that are in line with their environmental values, especially among women, who are more committed to

sustainable purchasing decisions.

The concept of a sustainable soft drink product that includes an environmentally friendly packaging solution, the metal bottle, fits well with Generation Z preferences. The research shows that this type of product can be successful in the market if it is competitively priced and supported by credible, transparent communication.

In addition, the research has shown that Generation Z is not only concerned about sustainability, but also about corporate social responsibility and ethical behaviour when making purchasing decisions. The results underline the need for companies to take these values into account in future product development and marketing strategies in order to remain competitive in the market in the long term.

In conclusion, the environmental awareness of Generation Z creates new opportunities for the development of sustainable products and the integration of environmental values into corporate strategies is of growing importance not only for Generation Z but also for other consumer groups. Commitment to sustainability will therefore become a key factor in the future success of companies.

Protecting the environment is everyone's responsibility, reducing the amount of packaging materials used in the production of products, and giving preference to reusable bottles to stop immense plastic pollution. The research also confirms that all generations are making the choice to protect the environment by conscious shopping, using environmental friendly degradable packaging or buying refillable products. At the same time, government and environmental regulations have already changes and will continue to significantly change the way businesses use packaging materials.

People who have a deeper understanding of sustainability make more informed and responsible choices when shopping, which contributes to protecting the environment and building a more sustainable future. For this reason, it is of paramount importance that the education of Generation Z focuses on sustainability education. Sustainability education materials integrated into education

not only help raise awareness of environmental issues, but also create opportunities for young people to learn to become responsible consumers who support sustainable development through their purchases.

### **LIST OF ABBREVIATIONS AND INTERPRETATIONS**

Generation Z: includes those born between 1997 and 2012

Generation X: includes those born between 1965 and 1980

Generation Y: includes those born between 1981 and 1996

4P: The component of the marketing mix, derived from the initials of the English terms product, price, place, promotion. The word 'product' stands for the product itself, the word 'price' for the price and pricing of the product, the word 'place' for the place of sale and the word 'promotion' for the sales promotion.

### **REFERENCES**

**Asher, M. I. – García-Marcos, L. – Pearce, N. E. – Strachan, D. P.:** Trends in Worldwide Asthma Prevalence. *European Respiratory Journal*. 2020. **56** (6) DOI: <https://doi.org/10.1183/13993003.02094-2020>

**Balogh, J. M.:** Európai Unió klímacélok teljesítése – hogy tartunk most? [European Union climate targets – where are we now?], 2020. Budapest: Klímapolitikai Intézet. Retrieved from URL: <https://klimapolitikaiintezet.hu/kutatas/europai-unios-klimacelok-hogy-tartunk-most> (Date of download: 13.10.2024.)

**Bauer, A. – Berács, J.:** Marketing. Aula Könyvkiadó, Budapest, 2006.

**Brodny, J. – Tutak, M.:** Analyzing Similarities between the European Union Countries in Terms of the Structure and Volume of Energy Production from Renewable Energy Sources. *Energies*. 2020. **13** (4) 913. DOI: <https://doi.org/10.3390/en13040913>

**Dieterle, K. – Scheffold, H. – Kühl, M. – Kühl, S. J.:** Environmental Knowledge and Environmental Awareness among Generation Z Students: An Online Survey at the University of Ulm. *Zeitschrift für Evidenz, Fortbildung und Qualität im Gesundheitswesen*, 2023. S1865-9217. DOI: <https://doi.org/10.1016/j.zefq.2023.03.010>

**Dunlap, R. E. – McCright, A. M.:** Challenging Climate Change. *Climate Change and Society: Sociological Perspectives*. New York, Oxford University Press, 2015.

**Fanni, Z. – Rezazadeh, S. M.:** Analysing the Urban Environment Sustainability Influenced by Tourism in Iran (District 1 of Teheran Metropolis). *GeoJournal of Tourism and Geosites*. 2018. **23** (3) 719–730. <https://doi.org/10.30892/gtg.23308-322>

**Fetting, C.:** The European Green Deal. ESDN report. 2020. 53.

**Forleo, M. B. – Giannelli, A. – Giaccio, V. – Palmieri, N. – Mastronardi, L.:** Geosites and Parks for the Sustainable Development of Inner Areas: The Matese Mountain (Italy). *GeoJournal of Tourism and Geosites*. 2017. **20** (2) 231–242.

**Guo, Y. – Xia, X. – Ruan, J. – Wang, Y. – Zhang, J. – LeBlanc, G. A. – An, L.:** Ignored Microplastic Sources from Plastic Bottle Recycling. *Science of The Total Environment*. 2022. **838** 156038. DOI: <https://doi.org/10.1016/j.scitotenv.2022.156038>

**Kawgan-Kagan, I.:** Are Women Greener than Men? A Preference Analysis of Women and Men from Major German Cities over Sustainable Urban Mobility. *Transportation Research Interdisciplinary Perspectives*, 2020. **8** 100236. DOI: <https://doi.org/10.1016/j.trip.2020.100236>

**Kiss, V. Á. – Kovács, S. – Szakály, Z.:** A fenntartható fejlődés értékei és az egészségtudatos életstílus elemzése középiskolás diákok körében. *Táplálkozásmarketing*. 2016. **3** (20) 41–62. DOI: <https://doi.org/10.20494/TM/3/2/4>

- Kiss, V. Á. – Tóth, O.:** A Környezettudatosság Megjelenése A Középiskolások Körében. *Journal of Central European Green Innovation*. 2016. **4** (1) 1–11. DOI: <https://doi.org/10.22004/ag.econ.232917>
- Kuqi, B.:** Theoretical Approach Concerning the Development of Sustainable Tourism as Tourist Destination in Kosovo. *GeoJournal of Tourism and Geosites*. 2018. **22** (2) 489–496. <https://doi.org/10.30892/gtg.22218-305>
- Laoues-Czibalmos, N. – Müller, A. – Mező, K. – Mercs, E. – Molnár, A.:** A környezeti nevelés és az egészséges életmód értékpreferenciáinak vizsgálata a "zöld" és "nem zöld" óvodába járó gyermekek szülei körében. *Acta Carolus Robertus*. 2019. **9** (2) 89–108. DOI: <https://doi.org/10.33032/acr.2019.9.2.89>
- Le, T. A. – Huyen, T. N. T. – Hanh, Q. N. T. – Phuoc, K. C.:** Announcement of the Sustainable Development Report of Vietnamese Hotel Enterprises. *Geo Journal of Tourism and Geosites*. 2023. **49** (3) 875–884. DOI: <https://doi.org/10.30892/gtg.49304-1088>
- Lukacs, R. – Szeberenyi, A. – Papp-Váry, Á. F.:** Attitudes towards Environmentally Conscious Lifestyle among University Students in Budapest in Light of their purchasing decisions and waste management. *Engineering for Rural Development*, 2023. **22** 233–241. DOI: <https://doi.org/10.22616/ERDev.2023.22.TF047>
- Manucom, M. G. C. – Alcaraz, K. P. – Alejo, R. P. S. – Gaddi, K. C. M. – Recio, K. E. P. – Yamaguchi, R. G.:** Awareness of Generation Z Students about The Plaf (Plastic Flamingo) and Other Campaigns Concerning Plastics in Online Shopping. *International Journal of Environment, Engineering and Education*, 2023. **5** (1) 9–18. DOI: <https://doi.org/10.55151/ijeedu.v5i1.78>
- McEachern, M. G. – Carrigan, M.:** Revisiting Contemporary Issues in Green/Ethical Marketing: An Introduction to the Special Issue. *Journal of Marketing Management*. 2012. **28** (3-4) 189–194. DOI: <https://doi.org/10.1080/0267257X.2012.666877>
- Müller, A. – Balatoni, I. – Csernoch, L. – Bács, Z. – Bíró, M. – Bendiková, E. – Bácsné Bába, É.:** Asztmás betegek életminőségének változása komplex rehabilitációs kezelés után. *Orvosi Hetilap*. 2018a. **159** (27) 1103–1112. DOI: <https://doi.org/10.1556/650.2018.31046>
- Müller, A. – Ráthonyi, G. – Bíró, M. – Ráthonyi-Ódor, K. – Bács, Z. – Ács, P. – Bába, É. B.:** The Effect of Complex Climate Therapy on Rehabilitation Results of Elderly Asthmatic and Chronic Obstructive Airways Disease (COPD) Patients. *European Journal of Integrative Medicine*, 2018b. **20** 106–114. DOI: <https://doi.org/10.1016/j.eujim.2018.04.007>
- Pálinkás, R. – Kinczel, A. – Miklósi, I. – Vácsi, P. – Laoues-Czibalmos, N. – Müller, A.:** Lifestyle Education, Health Education, Environmental Education, Movement. *Acta Carolus Robertus*. 2022. **12** (1) 129–142. DOI: <https://doi.org/10.33032/acr.2812>
- Pelikánová, R. M. – MacGregor, R. K.:** The Willingness of Generation Z to Financially Support CSR – A Central European Study. *Danube*. 2020. **11** (4) 271–282. DOI: <https://doi.org/10.2478/danb-2020-0016>
- Prameswari, Z. A. – Suyanto, A. A.:** Analysis of Consumer Awareness' Values and Attitudes towards Green Purchase Behavior: Study on Millennial and Generation Z. *International Journal of Business and Technology Management*. 2023. **5** (3) 516–527.
- Prata, J. C. – Silva, A. L. P. – Da Costa, J. P. – Mouneyrac, C. – Walker, T. R. – Duarte, A. C. – Rocha-Santos, T.:** Solutions and Integrated Strategies for the Control and Mitigation of Plastic and Microplastic Pollution. *International Journal of Environmental Research and Public Health*. 2019. **16** (13) 2411. DOI: <https://doi.org/10.3390/ijerph16132411>
- Sawicka, J. – Marcinkowska, E.:** Environmental CSR and the Purchase Declarations of Generation Z Consumers. *Sustainability*. 2023. **15** (17) 12759. DOI: <https://doi.org/10.3390/su151712759>

- Singh, S. – Salvi, S. – Mangal, D. K. – Singh, M. – Awasthi, S. – Mahesh, P. ... A. – Singh, V.:** Prevalence, Time Trends and Treatment Practices of Asthma in India: The Global Asthma Network Study. *ERJ Open Research*. 2022. **8** (2)
- Singh, M.:** Marketing Mix of 4P's for Competitive Advantage. *IOSR Journal of Business and Management*. 2012. **3** (6) 40–45.
- Szakály, Z. – Balogh, P. – Kontor, E. – Gabnai, Z. – Bai, A.:** Attitude toward and Awareness of Renewable Energy Sources: Hungarian Experience and Special Features. *Energies*. 2020. **14** (1) 22. DOI: <https://doi.org/10.3390/en14010022>
- Szilágyi, C. – Fehér, A. – Berencsi, A.:** Üdítőitalokkal kapcsolatos egészségtudatosság feltárása a fiatal felnőttek körében szemkamerás vizsgálat segítségével. *Economica*. 2022. **13** (3-4) DOI: <https://doi.org/10.47282/economica/2022/13/3-4/12491>
- Tóth, E.:** Környezetvédelem szerepe a termékfejlesztésben, zöld-designe. Debreceni Tehetséggondozó Diákkonferencia, Debrecen, 2024.
- Zhou, X. J. – Wang, J. – Li, H. Y. – Zhang, H. M. – Zhang, D. L.:** Microplastic Pollution of Bottled Water in China. *Journal of Water Process Engineering*. 2021. **40** 101884. DOI: <https://doi.org/10.1016/j.jwpe.2020.101884>
- Zuraidah, R. – Hashima, H. – Yahya, K. – Mohamad, S.:** Environmental Conscious Behaviour among Male and Female Malaysian Consumers. *OIDA International Journal of Sustainable Development*. 2012. **4** (8) 55–64.
- Zabkar, V. – Hosta, M.:** Willingness to Act and Environmentally Conscious Consumer Behaviour: Can Prosocial Status Perceptions Help Overcome the Gap?. *International Journal of Consumer Studies*. 2013. **37** (3) 257–264. DOI: <https://doi.org/10.1111/j.1470-6431.2012.01134.x>

## JEGYZETEK ✪ NOTES