

Article

Sustainable Consumption of Households According to the Zero Waste Concept

Małgorzata Bogusz ¹, Renata Matysik-Pejas ^{1,*}, Andrzej Krasnodebski ¹ and Paweł Dziekański ^{2,*}

¹ Department of Management and Economics of Enterprises, Faculty of Agriculture and Economics, University of Agriculture in Krakow, A. Mickiewicza 21, 31-120 Krakow, Poland; malgorzata.bogusz@urk.edu.pl (M.B.); andrzej.krasnodebski@urk.edu.pl (A.K.)

² Department of Economics and Finance, Faculty of Law and Social Sciences, Jan Kochanowski University in Kielce, Uniwersytecka 15 Str., 25-406 Kielce, Poland

* Correspondence: renata.matysik-pejas@urk.edu.pl (R.M.-P.); pawel.dziekanski@ujk.edu.pl (P.D.)

Abstract: The actions, decisions and behavior of consumers in a circular economy are defined as a circular consumption system. The circular economy is an alternative economic model to the linear model of production and consumption. This model is in line with the zero waste concept, which according to the Zero Waste International Alliance, is an ethical, economical, efficient and forward-looking concept in which consumer behavior includes buying products, caring for them and then recycling or reusing them. This is closely linked to adopting and committing to the circular business model of extending and reusing products. The aim of the study was to identify and describe consumer behavior and activities related to the zero waste concept. The analysis was conducted in the context of reusable products. The research was based on the CAWI method. The tool used to obtain the information was a structured questionnaire. The survey included 821 respondents from Poland, Slovakia and Ukraine. The survey shows that consumers are becoming increasingly aware of the consequences of consumption not based on choices with a positive attitude towards the environment. In addition, consumer sensitivity to environmental problems is growing. Growing consumer awareness and the promotion of healthy lifestyles by environmental organizations and movements are reversing unfavorable trends in favor of conscious consumption based on rational consumer choices, which translates into economic effects for households. The study found that the behavior of many respondents fits into the zero waste concept, implementing habits on a daily basis that are in line with sustainable consumption.

Keywords: zero waste; sustainable consumption; consumer



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1. Introduction

Sustainability is one of the most important issues facing communities today, as a number of environmental problems have been identified in recent decades that affect people's health and lives. Unsustainable levels and patterns of consumption are also at the root of sustainability challenges. Without changes in consumption behavior, the contribution of new technologies, social initiatives, economic policies or production systems, the process of sustainable consumption will be undermined. Sustainable consumption (SC) is becoming a major goal for local authorities, modern societies and businesses [1]. SC is a term used in the context of issues concerning human needs, quality of life, waste minimisation and resource efficiency, consumer health and safety and consumer sovereignty [2]. A number of different scientific disciplines deal with sustainable development in the area of consumption issues, such as economics, marketing, business strategies and social studies on consumer behavior. Moreover, these disciplines address the role and mechanisms of consumption at the individual, household and societal levels (from different perspectives) and complement each other to provide a comprehensive picture of consumption issues [2]. In contrast,

sustainable consumption behavior is defined as voluntary consumer behavior that promotes sustainability by recognizing the environmental and social impacts of consumption. Sustainable consumption behavior also facilitates the efficient use of unused resources (e.g., sharing spare household resources) and extends the life cycle of available products (e.g., keeping items in good condition for others), reflecting the significant potential for sustainable development in the sharing economy. The primary objective of sustainable consumption behavior is environmental protection, as pro-environmental behavior in the private sphere has a direct impact on the environment [3].

However, it should be emphasized that the scope of such sustainable consumption behavior is broad, taking into account not only environmental but also economic and social aspects in order to reduce waste and energy consumption and to improve the well-being of others in production and consumption [4]. The important point is that they are embedded in the consumption system, and their adoption is influenced by personal characteristics and context. Feedback loops reinforce existing behaviors, and path dependencies enable or hinder additional sustainable consumption [5].

The circular economy (CE) is a production and consumption model that is based on aspects such as sharing, lending, reusing, repairing, refurbishing and recycling existing products and materials for as long as possible. It is a way of extending the life cycle of products. In practice, this means that waste is reduced to a minimum. When a product is no longer usable, its materials are retained in the economy through recycling wherever possible. They can be used productively many times, thus creating additional value. It is a break with the traditional linear economic model based on a 'take-produce-consume-throw away' scheme. This model is based on large quantities of cheap, readily available materials and energy. The rapid obsolescence of products is also part of this model, where a product is designed to have a limited lifespan, with the consequence that consumers have to buy it again. The European Parliament has called for action to combat such practices [6].

In the context of industrial practice and social action related to excessive consumerism, the concept of zero waste (ZW) has emerged. It is defined as the creation and application of methods to minimize waste with a process of resource conservation. ZW promotes and encourages the redesign of products so that the raw materials from which they are made can be reused many times during the life cycle of the products. This should shape a reduction in the waste of materials, including, in particular, the conservation and extraction of natural resources. In line with this concept, waste is neither dumped in landfills, warehouses nor incinerated. The ZW idea fits into a circular economy. In it, resources are reused rather than creating waste [7,8].

The aim of the study research was to identify and describe consumer behaviors and activities related to the zero waste concept. The analysis was conducted in the context of reusable products.

2. Literature Review

The topic of sustainable consumption and production first appeared on the world political stage at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. Then, in 1994, sustainable consumption and production was defined as: "a holistic approach aimed at minimising the impact of social production and consumption systems on the environment. The goal of sustainable production and consumption is to maximise the efficiency and effectiveness of products, services and investments so as to meet the needs of society today without compromising the ability of future generations to meet their needs" [9]. The concept of sustainable consumption and production (SCP) was later recognized in the adopted Johannesburg Implementation Plan at the World Sustainable Development Summit (in 2002). SPC aims to "do more and better with less". In order to increase the net profit of a business, measures should be taken to reduce resource consumption and reduce environmental degradation and pollution throughout the life cycle of products. The result of such actions should be an improved quality of life. SPC involves a variety of stakeholders, i.e., businesses, consumers, researchers, scientists,

retailers, media and policy-makers, among others. It also requires a systems approach and cooperation between supply chain actors (i.e., from the producer to the final consumer). In the indicated area for consumer awareness, there should be a change in the area of education and preparation and provision of relevant information [10].

Sustainable consumption is closely linked to sustainable development, i.e., stable, taking into account those processes of change in which the use of resources, directions of technological progress and institutional change remain in a non-controversial and harmonious response, providing opportunities to meet human needs and aspirations in the future [11,12]:

- in the social dimension: participation in public decision-making, community work and equal treatment of women and minorities;
- in the environmental dimension: the ability to influence the purity of air, water and soil, the protection of plants and animals and the health of the local community;
- in the economic dimension: a fair financial return, decent wages and safe working conditions.

The increasing rate (and strength) of environmental degradation connected with climate change and social, economic, environmental and energy crises are increasingly shaping the need for changes in consumption behavior. These changes should shape sustainable consumption for safe and healthy living conditions for present and future generations [13]. The current culture of consumption needs to change. This should enable a transition to a circular economy. Failure to change will result in EU-level policies, such as the European Green Deal [14] and the Circular Economy Action Plan [15], remaining merely theoretical tools. The effect of inaction could be to reinforce the current unsustainable economic paradigm [16]. The circular consumption system is a set of consumer actions, decisions and behaviors that are in line with the principles of the circular economy. It represents an economic model that is an alternative to the linear pattern of production and consumption (i.e., take, produce and throw away). It aims to achieve sustainable development. CE is a multi-level and holistic approach, determined by innovation and minimization of resource requirements [17,18]. Circular consumption systems shape circular transaction processes: the acquisition and use of circular products and services. These circular transactional processes constitute behavioral chains, a sequence of unique actions performed during the consumption of circular offerings [19]. Pro-circular behavior should result from prioritizing the efficiency of resource reuse or the reduction in environmental, economic and social damage. Pro-circular consumer behaviors are those that promote resource efficiency and the flow of circular values in consumption systems. However, they are not rooted in people's consumption patterns. They are influenced in their shape and strength by cultural barriers. The transition to circular consumption implies both behavioral changes and an understanding of the processes that circular consumption entails [20]. The problems and opportunities for solutions in the area of circular economy in a closed loop are presented below (Table 1).

Table 1. Environmental, socio-cultural and economic problems and their solutions in circular economy.

Environmental	
Problems	Solutions
- climate warming; - destruction of ecosystems, species and landscape diversity; - over-consumption of non-renewable resources; - risks to human health (e.g., harmful substances, smog, radiation, noise).	- introduction of ecological programmes to combat global warming; - introducing pro-environmental concepts for the protection of ecosystems; - introduction of pro-ecological policies to reduce resource consumption; - efficient use of non-renewable natural resources while maintaining closed cycles; - the law of quality over quantity (material wealth) of human beings; - elimination of coal heating, reduction in car traffic in cities.

Table 1. Cont.

Environmental	
Problems	Solutions
Socio-cultural	
- insufficient implementation of democracy and the rule of law; - poverty; - insufficient social security, demographic trends; - inequality of opportunity (for example, gender); - insufficient internal and external security; - competition in the use of natural resources; - burden on health and quality of life.	- fight against poverty—social programmes, respect for democratic principles; - demography—birth rate; - fight against inequality of opportunity—e.g., gender (adjusting salaries, same maternity and paternity leave); - educational programmes—health care, healthy lifestyles, combating obesity.
Economic	
- instability of the national economy (for example, unemployment); - inadequate provision of basic needs, social (government) programmes that result in high prices; - imbalances in international economic relations, dependence on the supply of raw materials, state indebtedness; - inadequate provision of common goods and inequitable income distribution; - lack of use of renewable energy at an adequate level.	- alignment of education with labor market requirements (good vocational training); - social programmes adapted to develop the labor market and not to lead to more unemployment; - the introduction of criteria that will influence the fair distribution of income.

Source: own elaboration based on [21–24].

In the area of over-consumption and unsustainable production processes, a global consensus has emerged that widely accepts that climate change, driven by increasing air, water and soil pollution, deforestation and resource and material scarcity, requires approaches that go beyond traditional boundaries [25]. The Zero Waste International Alliance [26] defines the concept of zero waste as an ethical, economical, efficient and forward-looking concept of action. It enables people to change lifestyles and habits so that all discarded materials become resources that can be used by others. ZW comprises processes and actions that aim to protect the natural environment and change the waste management hierarchy (i.e., towards treating waste as a resource). The focus is, therefore, on resource efficiency and waste prevention. ZW proposes to optimize existing recycling activities, minimizing waste [8,27]. It is an idea that encompasses a variety of measures, experiences and interpretations emerging in the sphere of industrial and municipal practice and among social activists as well as consumers [8,28]. At the same time, it is in line with sustainable consumption, both in terms of management and economic impact.

3. Materials and Methods

The survey questionnaire prepared by the authors addressed a circle of issues related to Zero Waste, sustainable consumption, and the household purchasing process. It was also important to find out the level of use of products by respondents and the propensity of respondents to purchase products without packaging but in reusable containers.

The research process, using a survey questionnaire as a research tool, was carried out online as well as in an in-person meeting with the respondent. The process of research implementation was carried out by the authors in the following stages:

1. preparation of the survey concept, definition of the purpose and method of the survey, identification of the statistical community (subject of the survey), identification of the characteristics covered by the survey (subject of the survey),
2. conducting of the survey (collection of statistical material), review of the literature on the subject matter covered,
3. analysis, evaluation and elaboration of statistical material (graphs, tables, statistical description),
4. statistical inference.

The survey was conducted between January and June 2021 on a sample of residents of Poland, Czech Republic, Slovakia and Ukraine (Table 2). The computer-assisted web interview (CAWI) method was used to obtain information from respondents. Computer-assisted web interviewing (CAWI) is based on respondents completing an electronic questionnaire. The advantage is that the survey can be completed at any time and from any device with

internet access. This provides respondents with a sense of anonymity, which increases their willingness to provide honest answers. In addition, electronic questionnaires offer the possibility of supplementing the questions with graphic and audio-visual material. The method is characterized by low implementation costs, very high coverage, speed of the survey and ease of adaptation to individual requirements. Another major advantage of CAWI is the possibility of following the results in real-time.

Table 2. Characteristics of the sample.

Characteristics	Poland N = 503	Ukraine N = 138	Slovakia N = 180	Poland %	Ukraine %	Slovakia %
Gender						
Female	357	80	130	70.97	57.97	72.22
Male	146	58	50	29.03	42.03	27.78
Age						
Under 18	2	12	0	0.40	8.70	0.00
18–24	344	84	42	68.39	60.87	23.33
25–34	63	16	34	12.52	11.59	18.89
35–44	33	16	40	6.56	11.59	22.22
45–54	35	6	30	6.96	4.35	16.67
55–64	18	4	16	3.58	2.90	8.89
Over 64	8	0	18	1.59	0.00	10.00
Level of education						
Elementary	5	8	2	0.99	5.80	1.11
Vocational	6	8	2	1.19	5.80	1.11
Secondary	308	30	18	61.23	21.74	10.00
Higher	184	92	158	36.58	66.67	87.78
Place of residence						
Village	241	18	56	47.91	13.04	31.11
City of less than 10 thous. residents	33	34	10	6.56	24.64	5.56
City of 10.1 thous.–50 thous. residents	83	24	10	1.65	17.39	5.56
City of 50.1 thous.–100 thous. residents	27	22	82	5.37	15.94	45.56
City of more than 100 thous. residents	119	40	22	23.66	28.99	12.22

Source: Own research.

The countries selected for the study are neighbors, members of the EU (Poland, Slovakia, Czech Republic), as well as outside its structures (Ukraine). They are characterized by different policies on environmental problems, waste policy, environmental awareness and sustainable consumption processes. Due to the low number of completed questionnaires received from the Czech Republic, the country was not included in the survey results section.

The questionnaire prepared by the authors consisted of an introduction outlining the nature of the study, five questions on demographics (age, gender, place of residence and education) and 24 questions on knowledge of zero waste, sustainable consumption and the household purchasing process. The questions were closed-ended. Some of the questions were based on a five-point Likert scale. Only a small proportion of the collected material was used in this article. The questions included in the questionnaire provide information on the distribution of responses (e.g., what is the opinion or distribution of responses on respondents' behavior on issues of zero waste theory), dependencies between variables (e.g., chi-square test of independence, whether there is a dependency/association between place of residence or gender, and opinion or knowledge on zero waste, sustainable consumption; correlation analysis, whether there is a correlation, e.g., between the place of residence and level of knowledge on zero waste, sustainable consumption) and the significance of differences (whether there is a difference between groups in terms of the level of knowledge on zero waste, sustainable consumption and the elements that shape it). The questionnaire was prepared using Google Forms. The authors provided a link

to the survey through various communication platforms. This was important during the COVID-19 epidemic.

In the process of analyzing survey data, we had to deal with summaries, individual data (individual questions) and aggregated data. Most questions contained quantitative data, while some questions contained qualitative data. The analysis focused on analytical summaries for each question separately. A description of the data collected in the survey questionnaire, tables of counts or their graphical representation in the form of graphs can be used to examine empirical distributions.

The analysis was based on the number of surveys (N) that contain answers to a given question. Respondents did not always answer all the questions in the questionnaire; sometimes, they had the possibility to provide more than one answer to a question. Therefore, the number N (referring to the country) in the questions varied. The conclusions of the research are both cognitive (the results of the questionnaires provide information on the problem analyses) and applied. Applied conclusions are recommendations formulated by the authors on the basis of the results obtained.

To examine the dependence between two variables measured on a nominal scale, the χ^2 test of independent groups was used. It tests hypothesis H0, which states that the variables under study are independent, against the alternative hypothesis H1, which states that they are dependent. The χ^2 test is based on the comparison of the observed values (obtained in the study) and the theoretical values (calculated on the assumption that there is no dependence between the variables) based on the formula:

$$\chi^2 = \sum_{i=1}^k \sum_{j=1}^k \frac{(n_{ij} - \hat{n}_{ij})^2}{\hat{n}_{ij}}, \quad (1)$$

where:

n_{ij} is the observed counts;

$\hat{n}_{ij}$ is the theoretical counts.

The test statistic assuming H0 is true had a χ^2 distribution with $(k - 1)(n - 1)$ degrees of freedom (df). The assumed significance level (p) for the analyses was 0.05 [29–31].

The Student's t -test for independent groups was used to test the hypothesis of equality of means of the tested variable in two populations. The basic conditions of use were: measurement on an interval scale, normality of the distribution of the tested variable in both populations, independent model and equality of variance of the tested variable in both populations. Test statistics were based on the formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(n_1 - 1)sd_1^2 + (n_2 - 1)sd_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}, \quad (2)$$

where:

$\bar{x}_1$ and $\bar{x}_2$ are averages in the first and second samples;

n_1 and n_2 are counts in the first and second samples;

sd_1^2 and sd_2^2 are variances in the first and second samples.

The test statistic had a Student's t distribution with $df = n_1 + n_2 - 2$ degrees of freedom. The p -value obtained by the test statistic was compared with the significance level ($\alpha = 0.05$). If $p \leq \alpha$, hypothesis H0 is rejected and hypothesis H1 is accepted, and if $p > \alpha$, there is no reason to reject hypothesis H0.

One-way analysis of variance (ANOVA) tests whether one independent variable (factor) influences the results of a dependent variable. It is used when the independent variable has 3 or more levels. It involves comparing the between-group variance to the within-group variance. The intergroup variance should be large (large differences between subjects from different study groups), and the within-group variance should be as small as possible (as small as possible differences in the study variable) [32].

Calculations of the indicated tests within the article were carried out for χ^2 (for large tables) for Student's *t*-test, ANOVA (cross-sectional, simple for independent samples with respect to the variable), NIR Test, Tukey's RIR Test, HSD Test (unequal N) in Statistica and PQStat software 1.8.2.

4. Results and Discussion

Many of the products have been manufactured and designed according to the concept of a linear economy. This is characterized by extracting raw materials, making products, using them for as long as needed and, at the end of their life cycle, discarding them. Products are often incinerated or landfilled, turning valuable resources into waste. In the drive to make the economy more circular, information sharing is considered a key driver of change (as the authors also point out in the article, showing consumer information as a factor in producer decisions). Access to information about a product (its design, manufacture, recycling) is essential to keep products and materials in a closed loop [33].

The circular economy is based on the ability to recover resources. They should be in circulation instead of being imported from outside the production process. In closed-loop economy systems, products retain their added value for as long as possible, and there is no waste. Waste becomes a resource, and some resources can be taken from one production scheme and used in another without being discarded [34]. An important goal of the circular economy strategy is to extend the life of products, assuming that this will bring a reduction in the use of materials, energy and waste or a change in the attitudes of producers and consumers. Extending the life of products is regarded as a tool for reducing the material scale of the economy [35].

Sustainable consumption is the optimal, conscious and responsible use of available natural resources as well as goods and services at the level of individuals, households, communities (local, business), local governments, national governments and international structures, in accordance with the principles of sustainable development. The rationality of environmental use and the possibility of resource recovery should be exposed in its system. It provides people with an environment that is safe, not degraded beyond the limits of its resilience [11]. The overriding goal of sustainable consumption is quality of life, which should be considered in many aspects: economic, ecological, social, psychological, demographic, spatial and intertemporal [36]. Sustainable consumption is characterized by: durability, sustainability and self-support. Thus, sustainable consumption (zero waste philosophy) boils down to the search for such ways and directions of satisfying needs that are possible as a sustainable principle valid for many generations and not overstressing the chances of the prosperity of any of them [37]. Thus, attention should also be paid to the aspect of deconsumption as a tendency to reduce consumption in general. It is a conscious reduction in consumption to a rational size, resulting from the natural, individual, physical and psychological characteristics of the consumer. Four dimensions of this phenomenon can be identified: reduction in consumption due to the increase in the uncertainty of the situation of modern households, quantitative reduction in consumption in favor of an increase in qualitative aspirations, reduction in consumption in the material sphere in favor of the immaterial sphere and reduction in consumption in order to rationalize it [38].

Table 3 shows the percentage distribution of responses to the question on respondents' behavior on the issues of zero waste theory, shaping the process of sustainable consumption. In terms of the zero waste philosophy, they pay the most attention to shopping with a list so as not to buy unnecessary products, shopping with their own reusable bag, not buying plastic bags in the store, not taking a printout of the transaction confirmation or flyers on the street, not taking samples of goods (e.g., cosmetics) if it is known that they will not be used and gadgets (e.g., pens, reflective tags, USB stick) if they will not be useful. Analysis of respondents' answers also indicates that they pay attention, with varying degrees of intensity, to repairing clothes/shoes/electrical equipment instead of throwing them away, using glass packaging (jars, bottles) in the household, buying takeaway coffee in their own mug and substituting buying certain products by renting, swapping or sharing them with

other users. It can also be indicated that within the answers “I often behave this way”, more varied answers concern such behaviors as: I go shopping with my own bag, I do not take a printout of the transaction confirmation and I do not take gadgets. In the case of responses “I never behave this way”, they refer to behaviors such as: I go shopping with a list, I do not take samples of goods and I do not take gadgets (Figure 1).

Table 3. Respondents’ behavior on issues of zero waste theory (in terms of shaping sustainable consumption).

	Poland %			Ukraine %			Slovakia %		
	I Often Behave this Way	I Rarely Behave this Way	I Never Behave this Way	I Often Behave this Way	I Rarely Behave this Way	I Never Behave This Way	I Often Behave this Way	I Rarely Behave this Way	I Never Behave this Way
I go shopping with a list so I do not buy unnecessary products	60.24	30.82	7.95	69.57	17.39	10.14	63.33	30.00	4.44
I go shopping with my own reusable bag	83.10	14.51	1.79	59.42	34.78	2.90	78.89	15.56	3.33
I do not take a printout of the transaction confirmation	62.23	22.27	13.92	43.48	33.33	17.39	27.78	50.0z	18.89
I do not take samples of goods (e.g., cosmetics) if I know I will not use them up	47.91	33.40	17.10	53.62	33.33	7.25	43.33	33.33	18.89
I do not take gadgets (e.g., pens, reflective tags, USB memory stick) if I know they will not be useful	39.96	40.76	18.09	59.42	30.43	7.25	35.56	37.78	22.22
I try to repair clothes/shoes/electrical equipment instead of throwing them away	62.82	32.41	3.58	68.12	24.64	4.35	54.44	34.44	6.67
I buy good quality products to make them last longer	74.75	22.66	1.79	69.57	21.74	5.80	65.56	30.00	2.22

Source: Own research.

In order to test whether there is a statistically significant dependency between some of the respondents’ answers regarding their behavior towards the zero waste theory (in terms of shaping sustainable consumption) in the surveyed countries, a χ^2 test was conducted. The results obtained at $p = 0.05$ indicate that we have such a dependency. Only in terms of Polish respondents’ answers regarding the purchase of plastic bags in the store and the use of glass containers (jars, bottles) in the household do the obtained results indicate that such a relationship is not significant ($p = 0.280001$) (Table 4).

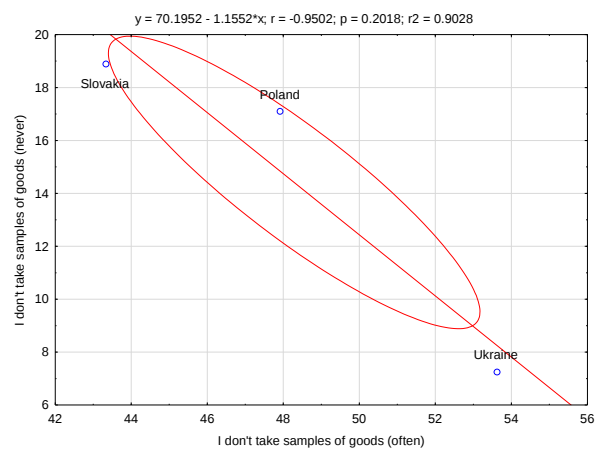
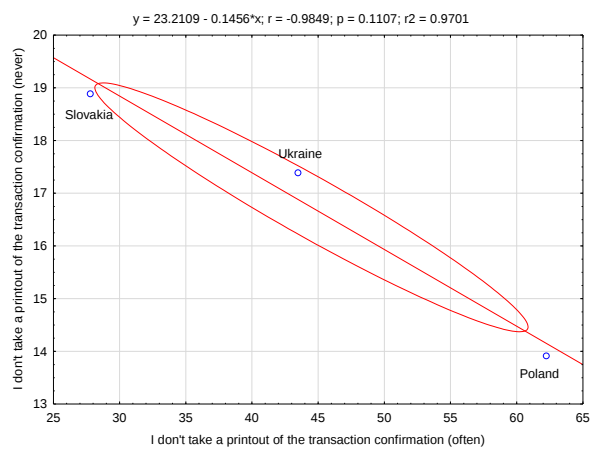
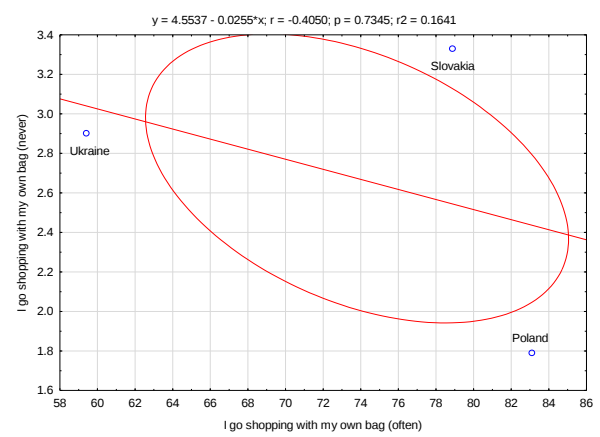
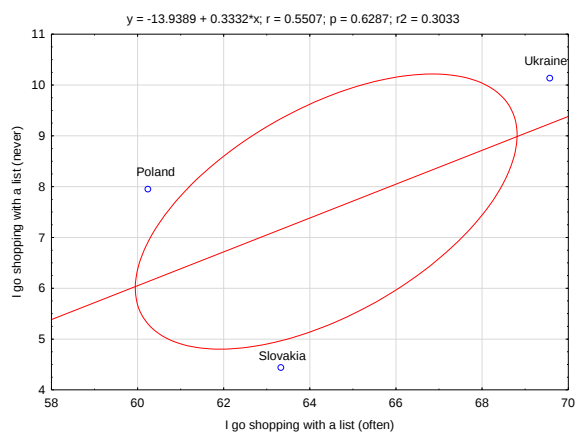
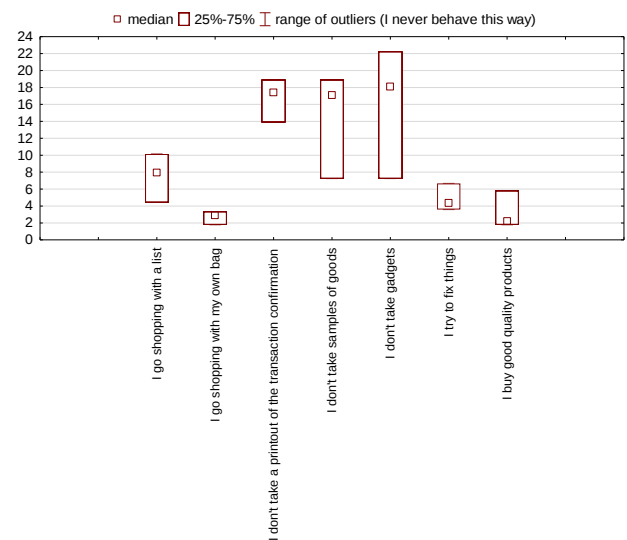
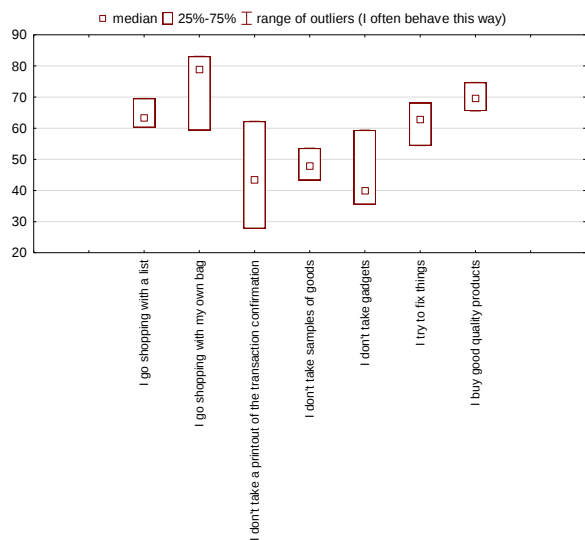


Figure 1. Cont.

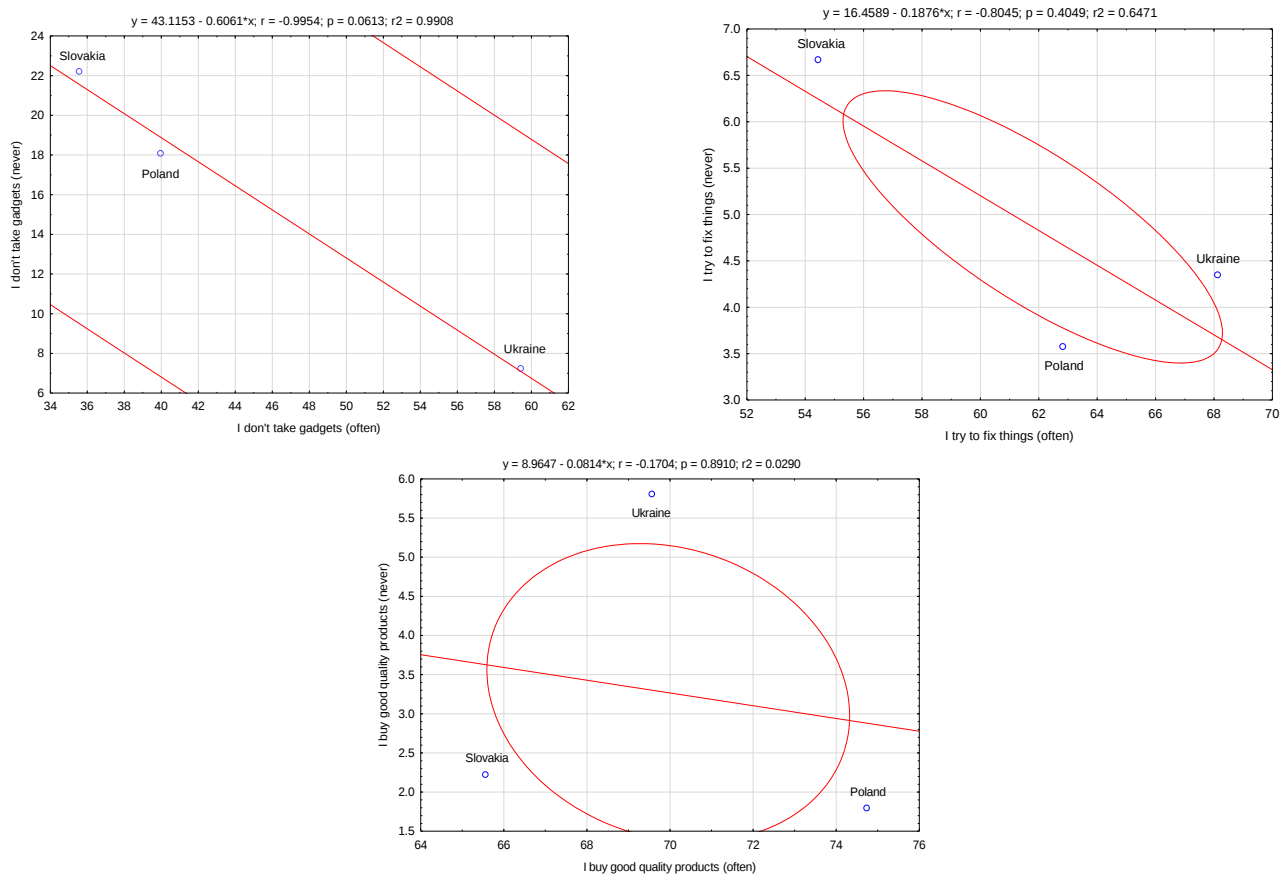


Figure 1. Behaviors shaping a sustainable purchasing approach by respondents (referring to the zero waste theory). Source: Own research.

Table 4. The results of the χ^2 test for the dependency between the studied countries in terms of the selected behaviors shaping a sustainable purchasing approach by respondents (referring to the zero waste theory).

Selected Behaviors	I Go Shopping with a List to Avoid Buying Unnecessary Products I Go Shopping with My Own Reusable Bag	I Go Shopping with my Own Reusable Bag I Do not Buy Plastic Bags in the Store	I Do not Buy Plastic Bags in the Store I Use Glass Containers (Jars, Bottles) in the Household
Country	Pearson's $\chi^2 = 67.442316$ df = 2	Pearson's $\chi^2 = 32.120708$ df = 2	Pearson's $\chi^2 = 2.545925$ df = 2
Poland	$p < 0.000001$	$p < 0.000001$	$p = 0.280001$
Ukraine	Pearson's $\chi^2 = 14.656679$ df = 2	Pearson's $\chi^2 = 5.878224$ df = 2	Pearson's $\chi^2 = 6.767439$ df = 2
	$p = 0.000657$	$p = 0.052913$	$p = 0.033921$
Slovakia	Pearson's $\chi^2 = 11.592117$ df = 2	Pearson's $\chi^2 = 38.206643$ df = 2	Pearson's $\chi^2 = 10.49884$ df = 2
	$p = 0.00304$	$p < 0.000001$	$p = 0.005251$

Source: Own research.

The European Union is determined to move from a linear to a circular economy. Society is producing increasing amounts of waste, exceeding the Earth's capacity for regeneration and natural resilience. In 2018, the total amount of waste generated by all economic activities and households in the EU countries was more than 23 million tons. Furthermore, it is projected that global annual waste production will increase by 70% by 2050 [39].

In the indicated process, the role of reliable measurement of resource consumption becomes important, as necessary for the development of appropriate climate and environmental policies. We can observe asymmetrical links between infrastructure development, green innovation and the environment. Increased material consumption affects the quality of the environment. It contributes to climate change, the depletion of natural resources, an increase in air and water pollution and a decrease in biodiversity. Increased use of natural resources indicates their possible scarcity for future generations. The development of infrastructure is one of the most important factors influencing the destruction of natural resources [40].

Today, there is an increase in the importance of the market and its changing environment on consumer choices and behavior. Consumer decisions must be made with an indication of aspects of social responsibility (for the environment), needs, preferences and opportunities for their implementation [41]. The consumption pattern of a household is shaped by the life-cycle phase of the household, the consumption patterns of the individuals in the household and the size of the income. Consumption habits of food goods cause environmental impacts related to food transportation, storage, cooking and waste generation. The increase in income allows for the purchase of more and more electronic equipment, which is associated with the increasing amount of consumed electricity [42]. Household activities have an impact on what happens regionally or globally.

As shown in Table 5, respondents from Poland and Ukraine are most likely (5—very likely) to buy dry products (e.g., rice, groats, pasta, muesli) and nuts/almonds/raisins without packaging (51.49% and 54.47% indications for Poland and 56.52% and 52.17% for Ukraine). The highest percentage of respondents from Slovakia would be willing to buy nuts/almonds/raisins without packaging (45.56%), as well as washing liquid (38.89%). Respondents from all surveyed countries are the least likely (1—unlikely) to purchase products without packaging concerning cosmetics (e.g., cream) and oil. Figure 2 shows the high level of variation in respondents' answers within the adopted scale (where 1—not likely; 5—very likely).

Table 5. Willingness of respondents to purchase products without packaging (but in reusable containers as part of shaping sustainable consumption) on a scale of 1–5 (where 1—not very likely, 5—very likely).

Products without Packaging		Respondent's Answer (%) *				
		1	2	3	4	5
Poland (N = 503)	Dry products (e.g., rice, groats, pasta, muesli)	6.76	7.36	16.90	16.30	51.49
	Oil	15.51	20.48	20.28	15.11	27.04
	Spices	5.77	10.14	17.50	19.68	44.73
	Nuts/almonds/raisins	5.37	5.96	13.12	19.48	54.47
	Cosmetics (e.g., cream)	23.26	17.89	20.68	13.72	22.86
	Washing powder	6.76	7.16	16.70	19.88	47.91
	Washing liquid	8.95	8.15	17.89	20.28	43.14
Ukraine (N = 138)	Fabric softener/dishwashing liquid/glass cleaner	8.35	8.55	17.10	19.48	45.33
	Dry products (e.g., rice, groats, pasta, muesli)	13.04	2.90	7.25	15.94	56.52
	Oil	15.94	13.04	23.19	17.39	27.54
	Spices	11.59	5.80	10.14	24.64	42.03
	Nuts/almonds/raisins	7.25	4.35	13.04	18.84	52.17
	Cosmetics (e.g., cream)	20.29	7.25	17.39	27.54	24.64
	Washing powder	5.80	17.39	21.74	18.84	31.88
	Washing liquid	11.59	10.14	20.29	27.54	27.54
	Fabric softener/dishwashing liquid/glass cleaner	11.59	8.70	11.59	27.54	36.23

Table 5. Cont.

Products without Packaging		Respondent's Answer (%) *				
		1	2	3	4	5
Slovakia (N = 180)	Dry products (e.g., rice, groats, pasta, muesli)	15.56	10.00	23.33	18.89	30.00
	Oil	22.22	15.56	24.44	15.56	18.89
	Spices	17.78	11.11	14.44	18.89	30.00
	Nuts/almonds/raisins	10.00	10.00	14.44	15.56	45.56
	Cosmetics (e.g., cream)	20.00	20.00	26.67	11.11	18.89
	Washing powder	3.33	16.67	18.89	17.78	37.78
	Washing liquid	10.00	12.22	13.33	22.22	38.89
	Fabric softener/dishwashing liquid/glass cleaner	10.00	13.33	14.44	24.44	33.33

* Not all respondents answered all questions. Source: Own research.

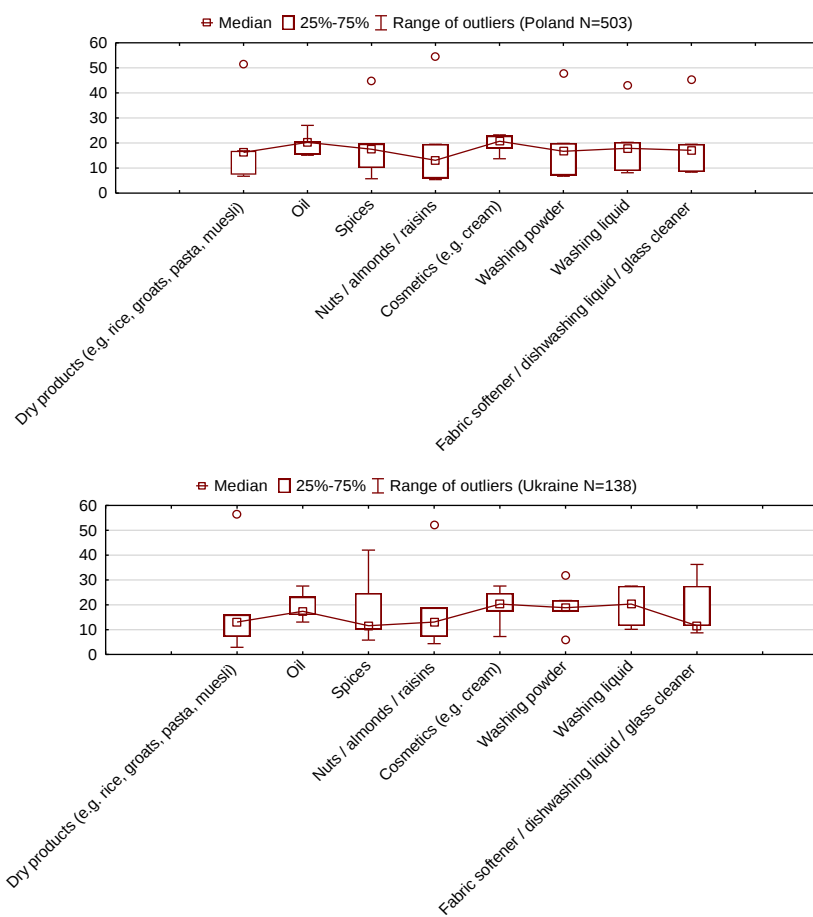


Figure 2. Cont.

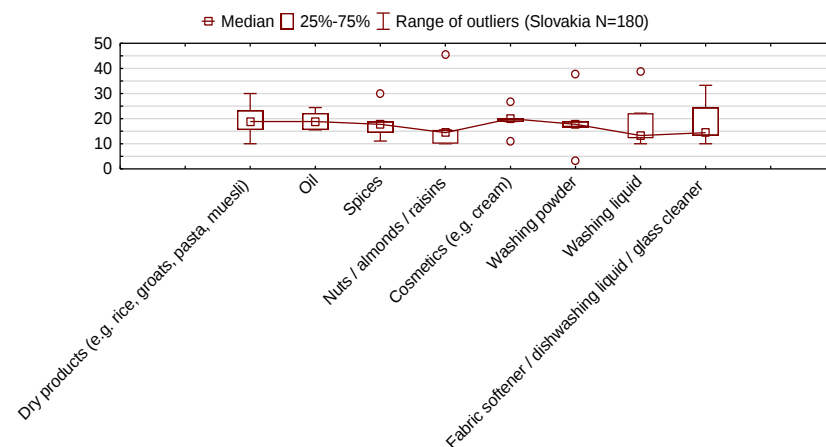


Figure 2. Respondents' propensity to purchase products without packaging (but in reusable containers as part of shaping sustainable consumption) (by % share), $\circ$ —outlier answers. Source: Own research.

In order to check whether the responses regarding the respondents' propensity to purchase unpackaged products (implemented by the zero waste idea within the framework of shaping sustainable consumption) were significantly different between respondents from the surveyed countries, a Student's *t*-test for independent samples was performed. Its results indicate statistically significant differences in the aspect of purchasing oils and cosmetics for comparison between Poland–Ukraine and Poland–Slovakia (Table 6).

Table 6. Student's *t*-score results for independent samples for respondents' propensity to purchase products without packaging (but in reusable containers).

	Poland–Ukraine	Poland–Slovakia	Ukraine–Slovakia
Dry products (e.g., rice, groats, pasta, muesli)	t = 1.68191157 df = 8 p = 0.131089615	t = 1.5368266 df = 8 p = 0.162890003	t = −0.602118607 df = 8 p = 0.563766883
Oil	t = 6.30237276 df = 8 p = 0.000232192741	t = 5.66480389 df = 8 p = 0.000473236913	t = −1.65805334 df = 8 p = 0.135893313
Spices	t = 2.0537375 df = 8 p = 0.0740770068	t = 1.88767565 df = 8 p = 0.0957678914	t = −0.668964732 df = 8 p = 0.522350095
Nuts/almonds/raisins	t = 1.53919994 df = 8 p = 0.162317847	t = 1.36836156 df = 8 p = 0.208391221	t = −0.47179785 df = 8 p = 0.649671264
Cosmetics (e.g., cream)	t = 7.12307336 df = 8 p = 0.0000996980343	t = 6.44778534 df = 8 p = 0.000198776843	t = −1.2160358 df = 8 p = 0.258632187
Washing powder	t = 1.89836525 df = 8 p = 0.0942047811	t = 1.66328013 df = 8 p = 0.134827244	t = −0.663104572 df = 8 p = 0.525905116
Washing liquid	t = 2.23738603 df = 8 p = 0.0556519634	t = 1.93032297 df = 8 p = 0.089675956	t = −0.736210174 df = 8 p = 0.482629133
Fabric softener / dishwashing liquid / glass cleaner	t = 2.09383187 df = 8 p = 0.0696020761	t = 1.86131078 df = 8 p = 0.0997296269	t = −0.744322928 df = 8 p = 0.47797234

Bold—significant dependencies. Source: Own research.

Food consumption, in particular the consumption of animal products, is one of the important environmental factors influenced by households in the European Union. Decisions made by consumers regarding lifestyle and consumption preferences (such as food waste generation) are of great importance [43].

Due to increasing global environmental problems such as global warming and climate change, environmental degradation and pollution, sustainable consumption behavior has become one of the most important issues in the market as well as an area of research over the past few decades. These problems can be mitigated by changing human behavior in a more environmentally sustainable way. Furthermore, sustainable consumption behavior (buying and consuming products in an environmentally friendly way) is considered a prerequisite for promoting sustainable development. Transforming unsustainable consumption habits is crucial to achieving the sustainable development vision. In addition, all EU member states have made a commitment to reach sustainable consumption as part of the promotion of the Sustainable Development Goals [44].

The research shows that consumers are becoming increasingly aware of the consequences of consumption that is not based on choices with a positive attitude toward the environment. Their sensitivity to environmental issues is also increasing. Consumers are paying attention to product labels and seeking information on product composition and its environmental impact. Growing consumer awareness and promotion of healthy lifestyles by environmental organizations and movements are reversing unfavorable trends in favor of conscious consumption based on rational consumer choices [45]. These activities must be supported by appropriate economic and informational instruments that shape and develop the ecological awareness of consumers. This leads to the abandonment of the purchase and consumption of environmentally harmful goods [46].

Respondents in Poland, Ukraine and Slovakia are most likely to use (5—very likely) fabric shopping bags. In addition, in the case of Poland, a high percentage of respondents declared they would be willing to use reusable containers for sandwiches and travel mugs. Respondents from Ukraine would be willing to use plastic-free bags and reusable food packaging. In contrast, respondents from Slovakia are most willing to use reusable water bottles and reusable containers for sandwiches. Furthermore, on the side of least willing to use products (1—not likely), respondents indicate mainly reusable diapers and reusable facial tissues (Table 7, Figure 3).

A Student's *t*-test for independent samples was carried out to check whether the responses regarding the level of use of products by respondents in shaping sustainable consumption differ significantly between respondents from the surveyed countries. Its results indicate that the differences are not statistically significant.

The essence of the analysis of variance is the breakdown of variation into additive components (the number of which is determined by the needs of the experiment). Comparison of the individual variance resulting from the action of a factor and the so-called error variance, i.e., the variance that measures random error, answers whether the factor has a major role in shaping the results of the experiment. By comparing the variance of a given effect with the error (within-group) variance with the *F* test, we decide whether the group averages of the effect under consideration differ significantly from each other or not. If the division into groups proceeds due to the different levels of the factors under study, we can thus detect a significant effect of the level of these factors on the effect of the value of the variable under study.

Table 7. Respondents' level of product use in shaping sustainable consumption on a scale of 1–5 (where 1—not very likely, 5—very likely).

	Products Shaping Sustainable Consumption	Respondent's Answer (%)				
		1	2	3	4	5
Poland (N = 503)	Reusable water bottle	3.18	4.97	8.35	13.52	69.38
	Reusable travel/thermal mug	1.79	3.18	7.95	12.13	73.76
	Reusable straw	16.90	11.13	14.51	13.92	42.54
	Reusable razors	6.16	7.75	13.72	16.10	55.07
	Reusable facial tissues	35.39	18.69	22.27	8.35	14.31
	Reusable containers for sandwiches and food	1.39	3.78	7.55	9.54	76.54
	Reusable diapers	34.99	19.88	21.87	8.35	13.52
	Fabric shopping bags	1.59	2.78	4.97	7.16	81.91
	Recycled toilet paper	12.72	13.32	21.07	18.89	32.60
	Plastic free bags	2.98	3.78	11.33	16.10	63.42
	Reusable sanitary articles	18.69	14.31	27.63	15.90	21.87
	Reusable cloths	4.77	8.35	14.71	19.68	50.89
	Reusable nets/bags for vegetables	2.19	4.97	11.13	18.09	62.23
	Reusable food packaging	1.99	5.37	11.53	20.87	59.24
Ukraine (N = 138)	Reusable water bottle	10.14	7.25	4.35	26.09	49.28
	Reusable travel/thermal mug	2.90	13.04	4.35	24.64	52.17
	Reusable straw	10.14	1.45	26.09	19.71	39.13
	Reusable razors	13.04	5.80	11.59	20.29	44.93
	Reusable facial tissues	15.94	11.59	15.94	20.29	33.33
	Reusable containers for sandwiches and food	4.35	5.80	10.14	20.29	56.52
	Reusable diapers	14.49	21.74	20.29	13.04	27.54
	Fabric shopping bags	5.80	4.35	7.25	14.49	65.22
	Recycled toilet paper	10.14	8.70	23.19	14.49	40.58
	Plastic free bags	7.25	4.35	8.70	10.14	65.22
	Reusable sanitary articles	4.35	8.70	18.84	30.43	30.43
	Reusable cloths	4.35	10.14	8.70	27.54	46.38
	Reusable nets/bags for vegetables	4.35	5.80	10.14	20.29	56.52
Slovakia (N = 180)	Reusable food packaging	2.90	4.35	13.04	17.39	59.42
	Reusable water bottle	7.78	7.78	14.44	11.11	56.67
	Reusable travel/thermal mug	7.78	10.00	14.44	20.00	45.56
	Reusable straw	14.44	8.89	20.00	16.67	35.56
	Reusable razors	13.33	8.89	20.00	15.56	36.67
	Reusable facial tissues	18.89	16.67	26.67	7.78	26.67
	Reusable containers for sandwiches and food	11.11	4.44	16.67	10.00	53.33
	Reusable diapers	20.00	22.22	20.00	13.33	15.56
	Fabric shopping bags	7.78	2.22	11.11	7.78	65.56
	Recycled toilet paper	6.67	6.67	20.00	14.44	46.67
	Plastic free bags	12.22	7.78	151.11	11.11	50.00
	Reusable sanitary articles	7.78	17.78	22.22	11.11	26.67
	Reusable cloths	7.78	6.67	33.33	17.78	30.00
	Reusable nets/bags for vegetables	5.56	8.89	14.44	20.00	46.67
	Reusable food packaging	6.67	12.22	12.22	22.22	42.22

Source: Own research.

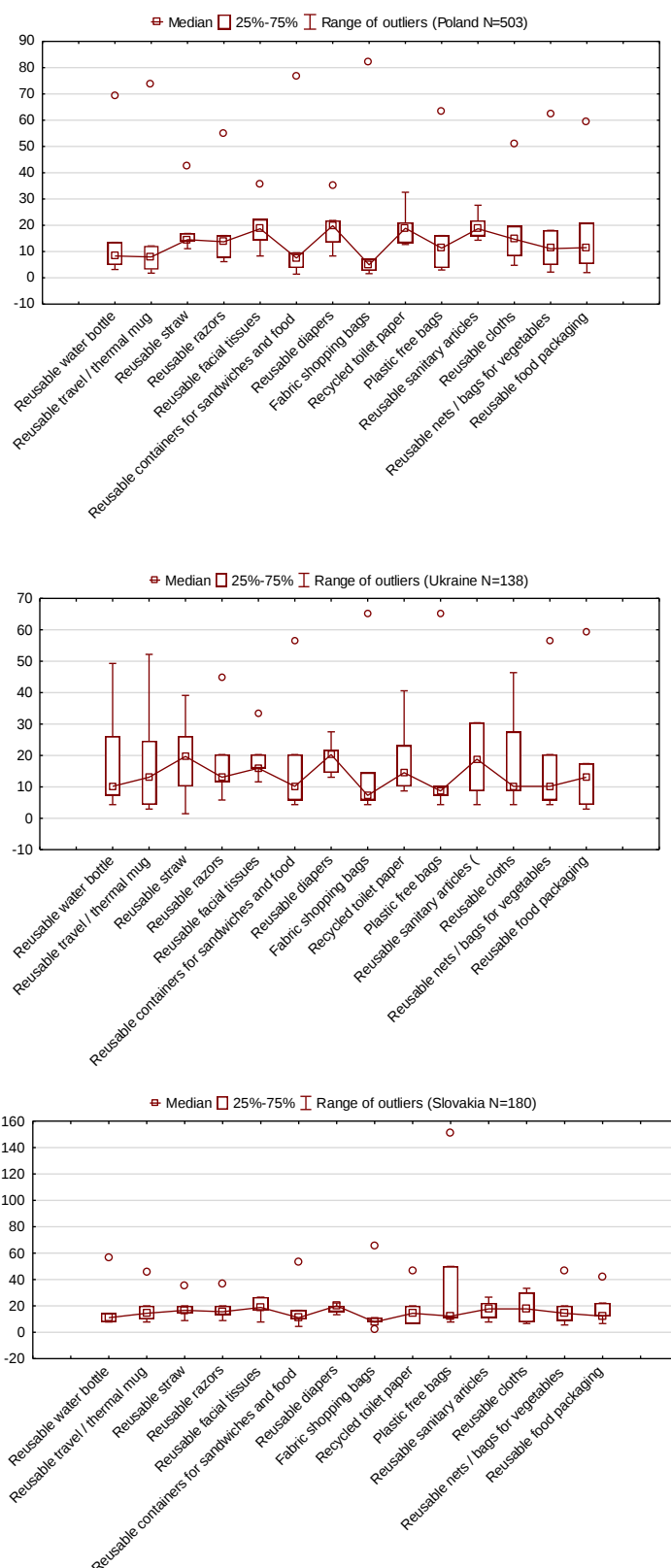


Figure 3. Level of product use by respondents in shaping sustainable consumption (by % share), ○—outlier answers. Source: Own research.

Cross-sectional analysis (simple ANOVA) made it possible to indicate the strength of the influence of individual unitary elements (gender, age, education, country, residence, each separately) on the responses within the quantitative data. We answer the question of

to what extent (with what probability) the extracted factors can be the reason for differences between the observed (average) groups. Comparing the individual variance due to the effect of the factor under study provides an answer as to whether the factor plays a significant role in shaping the results of the analysis. By comparing the F of the variance of a given effect, we resolve whether group averages differ significantly from each other or not. In this way, we can detect a significant effect of the level of factors on the value of the studied variable ($p = 0.05$). It is possible to see the influence of the indicated elementary (one-dimensional) variables on the results achieved (Table 8):

1. In the case of the influence of gender, one can detect a non-significant effect on the answers: the propensity to purchase products in reusable containers ($p = 0.4298$ —oil) and reusable products ($p = 0.9465$ —razors, $p = 0.4490$ —facial tissues, $p = 0.2204$ —reusable diapers, $p = 0.8891$ —recycled toilet paper, $p = 0.2379$ —plastic-free bags, $p = 0.5811$ —reusable sanitary items). In other cases, we observed the significant effect of gender on survey question responses ($p < 0.05$). To further confirm the differences (or reject them) between the separated groups, post hoc tests were conducted: NIR and Tuckey's RIR test. The results indicate that the answers provided by women and men are statistically not different (with a level of significance at $p < 0.05$).
2. In the case of age, the following were observed as non-significant: purchase of unpackaged products ($p = 0.1226$ —rinse/dishwashing/glass cleaner, $p = 0.184634$ —razors, $p = 0.648878$ —plastic-free bags, $p = 0.3531$ —reusable cloths, $p = 0.050$ —reusable vegetable bags/bags). In other cases, we saw the significant effect of age on survey responses. Additional tests indicated significantly different responses between the 18–24 and 25–34 age groups (NIR). Tuckey's RIR indicated no differences between the groups.
3. A non-significant effect concerning education was observed for goals met by zero waste (purchase of products in refillable containers, $p = 0.8559$ oil, $p = 0.6835$ cosmetics (e.g., cream), $p = 0.1740$ laundry detergent, $p = 0.1571$ rinse/dishwashing liquid/glass cleaner), reusable products ($p = 0.9920$ straw, $p = 0.2882$ razors, $p = 0.7642$ plastic-free bags, $p = 0.8035$ cloths, $p = 0.3133$ vegetable bags/bags, $p = 0.8777$ food packaging). In other cases, there was a significant tidal effect of education on survey responses. Additional tests (NIR, Tuckey's RIR) did not indicate differences between groups.
4. In the case of the influence of the respondent's country, non-significant differences were observed in the case of the purchase of unpackaged products ($p = 0.3971$ oil, $p = 0.1191$ nuts/almonds/raisins, $p = 0.3266$ cosmetics (e.g., cream), $p = 0.2339$ laundry detergent, $p = 0.2944$ rinse/dishwashing liquid/glass cleaner), use of reusable products ($p = 0.6866$ Straw). In other cases, a significant effect of the respondent's country on responses was observed. Additional tests did not indicate differences between the groups formed according to the respondent's country of residence.
5. In the case of the influence of residence on respondents' answers, the results of the analyses indicate the level of significance of answers in the case of purchase of products without packaging ($p = 0.2145$ dry product (e.g., rice, groats, pasta, muesli), $p = 0.7841$ oil, $p = 0.1495$ spices, $p = 0.0538$ nuts/almond/raisins, $p = 0.0545$ cosmetics (e.g., cream. cream), $p = 0.3868$ laundry detergent, $p = 0.4289$ rinse/dishwashing liquid/glass cleaner), reusable products ($p = 0.4113$ straw, $p = 0.8413$ razors, $p = 0.0525$ facial tissues, $p = 0.3263$ diapers, $p = 0.1626$ recycled toilet paper, $p = 0.1609$ plastic-free bags). For the other items in the survey questions, the place of residence had a significant influence. Additional tests indicated no differences between the groups thus selected.

Table 8. Results of ANOVA analysis of the strength of the influence of individual unit elements (gender, age, education, country, place of residence, each separately) on responses in the framework of shaping sustainable consumption.

Poland-Ukraine-Slovakia	Gender	Age	Education	Country	Place of Residence
Purchase of products without packaging	<i>p</i> —level of significance				
Dry products (e.g., rice, groats, pasta, muesli)	0.019582	0.000021	0.026678	5.7095	0.214503
Oil	0.429884	0.017016	0.855967	0.9896	0.784186
Spices	0.001424	0.000658	0.029675	4.6098	0.149549
Nuts/almonds/raisins	0.001072	0.000013	0.003909	1.9572	0.053888
Cosmetics (e.g., cream)	0.030033	0.010902	0.683540	1.1537	0.054597
Washing powder	0.038570	0.012022	0.019795	3.1067	0.011645
Washing liquid	0.029873	0.025645	0.174088	1.4261	0.386899
Fabric softener/dishwashing liquid/glass cleaner	0.021773	0.122690	0.157118	1.2393	0.428969
Use of products	<i>p</i> —level of significance				
Reusable water bottle	0.000001	0.000049	0.013984	5.1091	0.013305
Reusable travel/thermal mug	0.000000	0.000379	0.000001	13.8305	0.004248
Reusable straw	0.000000	0.013522	0.992043	0.4939	0.411384
Reusable razors	0.946546	0.184634	0.288250	4.1309	0.841329
Reusable facial tissues	0.449038	0.000000	0.000004	11.7600	0.052549
Reusable containers for sandwiches and food	0.004262	0.002613	0.000143	11.6134	0.000001
Reusable diapers	0.220412	0.000000	0.006350	7.0626	0.326363
Fabric shopping bags	0.000407	0.000029	0.001572	6.4866	0.010134
Recycled toilet paper	0.889105	0.000000	0.000000	3.5064	0.162648
Plastic free bags	0.237993	0.648878	0.764212	6.6797	0.160998
Reusable sanitary articles	0.581118	0.001184	0.004022	5.0589	0.090480
Reusable cloths	0.000002	0.353117	0.803570	3.8736	0.002136
Reusable nets/bags for vegetables	0.000908	0.050205	0.313394	3.1592	0.075997
Reusable food packaging	0.000104	0.012826	0.877766	4.5714	0.001954
NIR test	differences between groups: women and men	difference between groups: 18–24 and 25–34	none	none	none
RIR Tukey test	differences between groups: women and men	none	none	none	none
HSD test (uneven N)	none	none	none	none	none

Source: Own research.

A consumer's circular mindset is a consumer's belief and predisposition to engage in circular products or services. (Pro)circular behaviors are those that result from a priority approach to resource efficiency and benefit or at least reduce harm to the environment, the economy and society. (Pro)circular consumer behavior is one that promotes resource efficiency and value flows in circular consumption systems. That behavior is not always rooted in people's consumption patterns, as such solutions depend on overcoming barriers related to culture. [20]. There must be a change in mindset expressing consumers' willingness to change their purchasing behavior by preferring circular products to unsustainable ones [47,48].

Factors influencing circular behavior, and consequently circular consumer attitudes, can be grouped into political and legal, economic (price, income, financial situation and savings), environmental, demographic and consumer (product/service offerings) [49].

Sustainable consumption aims to meet the needs of present and future generations. Sustainable consumer behavior makes efficient use of unused resources (e.g., sharing household resources). Sustainable consumption also means extending the life cycle of

available products (e.g., keeping items in good condition for others). Such behaviors illustrate the great potential for sustainability in the sharing economy [50].

Consumption has become an important area of research and policy-making in relation to sustainable development. The search for a multifaceted approach to promoting more sustainable consumer behavior is extremely important. This is especially important given the significant influence of society's different consumption zones. [51]. Society's actions and choices have both direct and indirect effects on the state of the environment, social justice and individual (and collective) well-being [52].

Respondents' subjective perceptions of consumption varied considerably. Determinants of consumption perceptions were the place of residence (consumers in the largest cities considered their consumption rather sustainable), education (as education increased, the view of one's own consumption as sustainable increased) and perceived material situation (as the material situation improved, the belief in one's own consumption as more sustainable increased). A factor favoring sustainable consumption choices is the simultaneous increase in affluence and awareness of the human impact on the environment. The results of the survey suggest that some residents do not know how to practice sustainable consumption so it brings benefits [53].

One of the pathways to sustainability can also be the green economy. This is a resource-efficient, renewable economy [54].

Current evaluation of progress in achieving the goals of sustainable development in UN member states can be found in the 2023 Sustainable Development Report [55]. This is its eighth edition. The score shows the total progress towards achieving all 17 goals. The score can be explained as a percentage of implementation of the Sustainable Development Goals by each country. A score of 100 means that all the Sustainable Development Goals have been achieved. The highest score was achieved by Finland. Poland is ranked 9th in this ranking, while Slovakia is ranked 23rd. Ukraine is ranked 38th, ahead of EU countries such as Malta, Bulgaria and Cyprus (Table 9).

Table 9. Ranking of EU countries and Ukraine in terms of achieving the 17 Sustainable Development Goals compared to all UN member states.

Position in the Ranking	Country	Score
1	Finland	86.76
2	Sweden	85.98
3	Denmark	85.68
4	Germany	83.36
5	Austria	82.28
6	France	82.05
8	Czech Republic	81.87
9	Poland	81.80
10	Estonia	81.68
12	Croatia	81.50
13	Slovenia	81.01
14	Latvia	80.68
16	Spain	80.43
17	Ireland	80.15
18	Portugal	80.02
19	Belgium	79.46
20	Netherlands	79.42

Source: [55].

5. Conclusions

Socio-technological and economic development on a global scale has contributed to rapid growth and overproduction, which has been reflected in excessive consumption in many respects: from food to technology and all kinds of products that fit the pattern of a typical rural household. Excessive growth in production and consumption has resulted in the degradation of the natural and cultural environment in the broadest sense.

That is why the idea that could significantly influence the creation of new attitudes among consumers is so important, and we are talking here about sustainable consumption. That is, consumption, which means such a way of using material goods and services that provides consumers with a better quality of life and simultaneously does not degrade the environment and does not threaten the consumption of future generations.

Sustainable consumption aims to avoid ecological catastrophe. It requires the implementation of socio-economic objectives, taking into account the impact on the natural environment. It is related to sustainable development and applies to almost all aspects of the daily functioning of residents or entrepreneurs. The precondition for the implementation of the idea of sustainable consumption is a significant change in consumer behavior, activities that promote a change in the quality of life and choices that take into account the needs of the natural environment.

As the results of the literature analysis show, creating ecological awareness of individual household members about the threats posed by the lack of care for the natural environment is extremely important from the point of view of implementing the concept of sustainable development, which is part of the broader activity of the zero waste idea.

The authors, analyzing the results of the conducted research as well as the existing data, including scientific studies and reports, indicate that an important activity in the field of comprehensive activities in the area of sustainable consumption should be an educational activity, both at the level of school education and lifelong learning. In addition, educational activities should be carried out systemically; that is, from the relevant laws and ministerial regulations, through programs prepared for both children and youth, adults, but also broadly understood producers in relation to us, i.e., consumers of goods.

Respondents from Poland and Ukraine would be most likely to buy without packaging in the case of dry products (e.g., rice, groats, pasta, muesli) and nuts/almonds/raisins (51.49% and 54.47% indications for Poland and, respectively, 56.52% and 52.17% for Ukraine). The highest percentage of respondents from Slovakia would be willing to buy nuts/almonds/raisins without packaging (45.56%), as well as washing liquid (38.89%). Respondents from all surveyed countries are the least likely to purchase products without packaging in the case of cosmetics (e.g., cream) and oil.

Respondents in Poland, Ukraine and Slovakia would most likely use fabric shopping bags (81.91%, 65.22% and 65.56%, respectively). In the case of Poland, a high percentage of respondents said they would use reusable sandwich containers (76.54%) and travel mugs (73.76%). Respondents from Ukraine would also be very likely to use plastic-free bags (65.22%), reusable food packaging (59.42%), reusable sandwich and food containers and reusable vegetable nets/bags (both 56.52%). In contrast, respondents from Slovakia would be most likely to use reusable water bottles (56.67%), reusable sandwich and food containers (53.33%) and plastic-free bags (50.00%). In all countries, reusable facial tissues and reusable nappies were the products that the highest percentage of respondents would not like to use.

The research results clearly showed the importance of reusable products. This should be a sustainable direction for both manufacturing and consumer activities. Therefore, all kinds of programs, information and educational campaigns will be of great importance here.

Importantly, household consumption is determined by a number of social, economic, demographic and natural factors. For example, research has shown that the functioning of individual households in terms of sustainable consumption is influenced by the age, education, location and wealth of individual respondents. All this determines the relationship between supply and demand.

Based on the findings of research conducted in three Central and Eastern European countries, it was concluded that a given household model is influenced by a number of factors, the use of which should be regulated by law at all levels: local, regional, national and international, from a practical perspective. On the other hand, the authors' theme should be continued by carrying out further research in this area and extending it to other countries.

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