Article

Gen Z and Their Sustainable Shopping Behavior in the Second-Hand Clothing Segment: Case Study of the Slovak Republic

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Abstract: The fashion industry is an integral part of people's lives with different purchasing behaviors depending on age and education. In this paper, we focused on the perception of online shopping for second-hand clothes and shoes among Generation Z. This group has a lot of experience in using technology, so online shopping is a suitable way to buy second-hand clothes. The article aims to analyze the online shopping behavior of Gen Z, focusing on benefits, obstacles, environmental awareness, and preferred shopping platforms. We studied consumer preferences in shopping for second-hand clothes based on a sample consisting of 340 respondents representing Generation Z through an online Google Forms questionnaire published from November to January. The results show that price is the biggest advantage of shopping for second-hand clothes. Moreover, we found that the environmental aspect plays a significant role for all consumers, regardless of the online experience of shopping for second-hand clothes and shoes. The correspondence maps demonstrate that consumers with shopping experience planning a future purchase of second-hand clothing are aware of the environmental impact of purchasing clothing together with potential buyers of second-hand clothing, unlike consumers without any interest in purchasing second-hand clothing. These consumers and potential buyers of second-hand clothing consider environmental protection and high-quality, diverse (unique) clothing to be key benefits, in contrast to a smaller selection and used clothing. These conclusions provide a theoretical basis for understanding the sustainability and shopping requirements of the selected group.

Keywords: Generation Z; e-shopping; second-hand; sustainability; correspondence analysis

1. Introduction

The fast fashion system allows companies to respond quickly to changing consumer demands at good prices. On the other hand, the environmental impacts of the fashion industry are extensive and significant. Consumers tend to own more clothing, so clothing is considered an underutilized product. [1] The fashion industry produces up to 10% of global CO_2 emissions [2]. Global textile production per capita increased from 5.9 kg to 13 kg per year from 1975 to 2018 [3]. Fashion brands currently produce almost double the amount of clothing compared to pre-2000 [4]. The drastic increase in textile production and fashion consumption is reflected in the development of fast fashion, a business model based on offering new trendy clothes and shoes to consumers.

One of the ways to support sustainability is to buy second-hand clothes. Second-hand clothes represent the reuse of clothes; this clothing is part of a circular economy, unlike new pieces of clothing [5,6]. Although there are stereotypes against second-hand clothing, its consumption helps reduce the environmental and social impacts of the fashion industry [7,8]. Shopping for second-hand clothing can offer consumers several advantages, such as better prices and unique pieces of clothing; on the other hand, many consumers

do not prefer worn clothes [9]. The second-hand clothing market extends the life cycle of clothing. This segment is likely to grow by 18% by 2030, a two-fold increase compared to fast fashion [10]. Second-hand fashion is an effective means of reducing the environmental and social impacts of the fashion industry [11]. Market projections demonstrate that the second-hand market will increasingly play a key role in fashion circulation [12]. In Western countries, the second-hand fashion market is still only a marginal market; customers are mainly poor people believing that the circular economy is truly sustainable [13].

Based on age, consumers can be divided into groups or segments with strong homogenous characteristics; therefore, marketers can target segments with these characteristics to offer products according to their requirements [14]. The most well-known age distribution of consumers can be classified as Gen X, Y, or Z, also known as multi-generational marketing. The division depends on birth, but there are differences in the division according to various authors. In the publication [15], the author points out these differences: Generation X is from 1965 to 1975 or 1980; Generation Y (Millennials) is from 1975 to 1980, 1995, or 2000; and the Post-Millennials (Generation Z) group is from 1996 or 2000 to the present. In the fashion industry, Gen X consumers focus on comfort when shopping for clothes and do not prefer designer clothes, unlike Gen Y. These people see designer pieces as part of their social status to impress those around them [16].

Gen Z represents young consumers "born with technology". This factor leads to a change in the lifestyle of young people, who need to be looked at differently than previous generations [17]. Generation Z will also show a positive attitude towards the sharing economy. As digital natives, Gen Z consumers naturally appreciate those innovative businesses that allow individuals to interact and provide mutually satisfying exchanges. In the field of fashion, exploratory empirical studies point to an interesting attitude in Generation Z towards clothing lending or collaborative clothing consumption [18].

Online shopping research uses a cognitive approach [19]. Novak et al. [20] proposed a so-called "flow" to capture the customer experience in an online context. Customers do not perceive time because they are focused on online navigation on the company's website [21,22]. Generation Z, generally women, like to buy second-hand goods, especially clothes, through online shopping [23]. P2P (peer-to-peer) second-hand firms can thus focus more on improving all shopping attributes to create a positive attitude that subsequently influences shoppers' repeat purchase behavior [24,25].

Notorious acquaintance online platforms include, for example, eBay and Vinted, which are oriented towards clothing products. These platforms allow users to buy potentially high-quality products at a discount while allowing sellers to consign used items to make money and free up space in their homes [26]. Currently, Vinted is a consolidated leading platform for buying and selling used clothing and other materials with more than 65 million users and more than 1200 employees, operating in 16 countries: Austria, Belgium, Canada, France, Germany, Italy, Lithuania, Luxembourg, Poland, Portugal, Slovakia, Spain, the Netherlands, the Czech Republic, the United Kingdom, and the USA [27].

One of the key factors impacting Post-Millennials is the development of online shopping and marketing for their technological skills [28,29]. Dharmesti et al. found a positive relationship with Gen Z online shopping, which significantly influences their intentions to shop online. A good familiarity with online shopping strongly triggers their information-seeking behavior that leads to online purchase intentions [30].

There is a lot of research focusing on the purchasing strategy and habits of Generation Z. This generation is influenced by other (new) ways of approaching the fashion market [31–33]. Utomo et al. investigated aspects of a hedonic lifestyle such as shopping, interest in fashion, and thinking about products [34]. Generation Z spends more than USD 140 million annually and influences household purchases by more than USD 600 million [35,36]. Surveys from all continents point to the global influence of this generation [37]. Gen Z is the so-called guardian of sustainability, according to PricewaterhouseCoopers (PwC). These respondents consider quality as one of the prerequisites for purchasing and prefer to purchase sustainable products (37%), with a desire to spend more on purchasing

a responsible product [38]. Research [39] claims that online shopping services have little direct effect on Gen Z's online impulse purchases. Site quality, privacy, and online shopping services have an impact on purchases. The joy of shopping increases impulse buying behavior online. In addition to shopping feelings, Gen Z can positively perceive the relationship between sustainable behavior, satisfaction, and environmental protection activities [40]. On the one hand, sustainable behavior can be perceived by second-hand shopping, and this behavior can gain added value in the form of online second-hand shopping [41].

This paper points to insight into the behavior of Generation Z in Slovakia in purchasing used clothing using an analysis of categorical variables. Many consumers prefer shopping in the "online space" [42]. Gen Z has a lot of experience with digital knowledge [43], so this group of consumers is analyzed in this paper. This paper aims to analyze the online shopping behavior of Gen Z, focusing on benefits, obstacles, environmental awareness, and preferred shopping platforms.

2. Methodology and Materials

The total sample consisted of 376 respondents. However, this paper deals with shopping behavior with a focus on alternative forms of shopping such as buying second-hand clothes as a counterpoint to fast fashion in a specific group, namely Generation Z with a year of birth from 1997 to 2012, according to [15]. Therefore, the final sample included 340 respondents. This questionnaire was available online via Google Forms from 5 November to 4 December 2023, for a total of 30 days. The questionnaire consisted of several parts, such as the socio-demographic characteristics of the respondent, fast fashion as opposed to sustainable consumption, shopping for second-hand clothes, and swapping clothes. The questionnaire had more than 100 questions, and the total filling time was up to 15 min, depending on the respondent. All respondents voluntarily agreed to fill out the online questionnaire, and the answers were recorded anonymously. In this paper, we only focus on the part about the online shopping experience with second-hand clothes, online second-hand platforms, and the advantages and disadvantages of buying second-hand clothes. The methodology is based on consumer perception towards second-hand clothing [44–46].

Table 1 shows the random sample consisting of 340 respondents aged between 11 and 20 years. The majority of respondents are men (191, more than 56% of the total). In addition, almost 50% of the respondents live in the countryside, in a village with less than 5000 inhabitants; on the other hand, 118 respondents (almost 35%) live in a city with more than 20,000 inhabitants. Finally, 240 respondents from Generation Z (more than 70% of the total) have a secondary education. We found that men and women with secondary education and permanent residence in a municipality with less than 5,000 inhabitants are the two most numerous subgroups, in contrast to men and women with primary education and permanent residence in a city with a population of 5001 to 20,000 inhabitants.

Table 1. Sample.

Gender/Education Level	Up to 5000 Inhabitants	5001–20,000 Inhabitants	More than 20,000 Inhabitants	Total
Male	**86**	**31**	**74**	**191**
Elementary education	4	1	4	9
Secondary education	59	25	51	135
University education	23	5	19	47
Female	**74**	**31**	**44**	**149**
Elementary school	13	1	2	16
Secondary School	48	26	31	105
University education	13	4	11	28
Total	**160**	**62**	**118**	**340**

2.1. Variables

Table 2 shows the categorical (nominal and ordinal) variables dealing with selected characteristics such as gender, education level, residence size, online shopping experience

with second-hand clothes, advantages, disadvantages, and favorite online second-hand platforms. We did not use the category "other" for the main advantages, disadvantages, and preferred online platforms to analyze the categorical variables.

Table 2. Descriptive statistics.

Variable	Acronym	Category	N	%	Modus	Median
Gender	0	Men	191	56.2	0	0
	1	Women	149	43.8		
Education level	0	Elementary education	25	7.4	1	1
	1	Secondary education	240	70.6		
	2	University education	75	22.1		
Residence size	0	Up to 5000 inhabitants	160	47.1	0	1
	1	5001–20,000 inhabitants	62	18.2		
	2	More than 20,000 inhabitants	118	34.7		
Online shopping experience with shopping for SHC	0	I have not bought, nor do I plan to.	114	33.5	0	0
	1	I have not bought it, but I plan to.	76	22.4		
	2	I bought it, I plan to.	113	33.2		
	3	I bought it but do not plan to anymore.	37	10.9		
Ecological awareness	0	Disagree	21	6.2	2	2
	1	Rather disagree	105	30.9		
	2	Rather agree	143	42.1		
	3	Agree	71	20.9		
The main advantage of shopping for SHC	0	Price	193	56.8	0	0
	1	Quality, diverse (unique) clothing	34	10.0		
	2	Vintage style	24	7.1		
	3	Environmental protection	64	18.8		
	4	Other	25	7.4		
The main disadvantage of shopping for SHC	0	Time-consuming to look for clothes	69	20.3	1	1
	1	Worn clothes	142	41.8		
	2	Old-fashioned clothes	18	5.3		
	3	Small selection	62	18.2		
	4	Bad quality	29	8.5		
	5	Other	20	5.9		
Preferred online second-hand platform	0	Slovak online platforms	36	10.6	3	2
	1	Lithuanian online platforms	103	30.3		
	2	American online platforms	54	15.9		
	3	Other	147	43.2		

2.2. Methods

We established four hypotheses. These hypotheses were tested with the chi-square test; moreover, potential dependencies are graphically represented using correspondence maps. This paper aims to assess purchasing behavior, benefits, and obstacles on online platforms in the second-hand-clothes selling segment from the point of view of Gen Z consumers.

H1. *The online shopping experience with SHC and the main benefits of buying SHC are independent.*

H2. *The online shopping experience with SHC and the obstacles to buying SHC are independent.*

H3. *The online shopping experience with SHC and environmental awareness are independent.*

H4. *The online shopping experience with SHC and the online second-hand platforms used are independent.*

We used the chi-square test as a statistical test to determine a statistically significant relationship between two categorical variables. The overall process consists of several steps, such as creating a contingency table with actual frequencies for selected combinations of categorical variables, calculating expected frequencies (Appendix A), calculating the *p*-value, and interpreting the results.

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i} \tag{1}$$

where the components of the equation are as follows:

χ^2: Chi-square based on a pivot table;
O_i: Theoretical (actual) frequencies;
E_i: Expected frequencies.

The test requires categorical variables such as nominal or ordinal variables, a random sample, independence between two categorical variables, and a larger sample. Moreover, all expected counts for a 2×2 pivot table must be equal to or greater than 5, unlike a table with a different size. These tables must have at least 80% of all expected frequencies of 5 or more.

Cramer's V was used to determine the degree of dependence in the relationship between two categorical variables, such as nominal or ordinal variables. This statistical measure takes values from 0 to 1, with 0 meaning no relationship as opposed to 1.

$$V = \sqrt{\frac{\chi^2}{n \times \min(k-1, r-1)}} \tag{2}$$

where the components of the equations are as follows:

χ^2: Chi-square based on a pivot table;
n: Total number of observations;
k: The number of columns in the pivot table;
r: The number of rows in the pivot table.

Cramer's V is divided into five groups:

Less than 0.1—weak dependence;
Values of 0.1–0.3—moderately strong addiction;
Values of 0.3–0.5—strong dependence;
More than 0.5—very strong association.

Finally, we applied a correspondence analysis. This statistical method analyzes the dependence between two categorical variables to identify the dependence between categories of variables based on a contingency table. This process consists of four steps: creating a contingency table with absolute frequencies, creating a correspondence table with relative or expected frequencies, reducing dimensions, and visualization using a correspondence map.

The absolute frequencies nij represent the basic input matrix for the determination of row absolute and column marginal frequencies in the correspondence matrix. The relative frequency is calculated with the row profiles pi/j and the column profiles pj/i. [47]

$$p_{j/i} = \frac{n_{ij}}{n_{i+}} = \frac{p_{ij}}{p_{i+}} \tag{3}$$

$$p_{i/j} = \frac{n_{ij}}{n_{+j}} = \frac{p_{ij}}{p_{+j}} \tag{4}$$

The mutual location of the points in the dimensional space determines the strength of the dependence. If the points cluster together in the correspondence matrix, it means a strong dependence. The total inertia I is associated with the variability of points according to Formula (4) [48].

$$I^2 = \sum_i p_{+j} d_j^2 \qquad (5)$$

We performed a correspondence analysis using the statistical–analytical program IBM SPSS 29 based on data from an online questionnaire [49]. The main output of the correspondence analysis is a map that visually explains the contingency between the categories examined. However, the correspondence analysis is relevant provided that the contingency is statistically significant based on the chi-square test. A correspondence analysis, as one of the few analyses, does not require the assumption of a normal distribution. On the other hand, the assumptions of the correspondence analysis include the homogeneity of variance for row and column variables. Second, the analysis assumes that the data are discrete. Third, the data should contain at least three categories of categorical variables. Finally, all frequencies in the contingency table must be non-negative [50].

3. Result

Table 3 shows statistically significant relationships between online second-hand clothing shopping experience and benefits of second-hand clothing shopping, barriers to second-hand clothing shopping, environmental awareness, and the preferred online second-hand platform based on the chi-square test (*p*-value < 0.05). In other words, we reject the null hypotheses, and we accept the alternative hypotheses. Cramer's V demonstrates a moderately strong dependence (more than 0.3) between the online shopping experience of second-hand clothing and the preferred online platform, unlike the others. The total number of observations varies from 193 to 340; the other respondents were removed due to the wide variety of answers based on the "other" option in the online questionnaire. All assumptions for applying the chi-square test were met, all expected frequencies are greater than 1, and at least 80% of expected frequencies have a value of 5 or more.
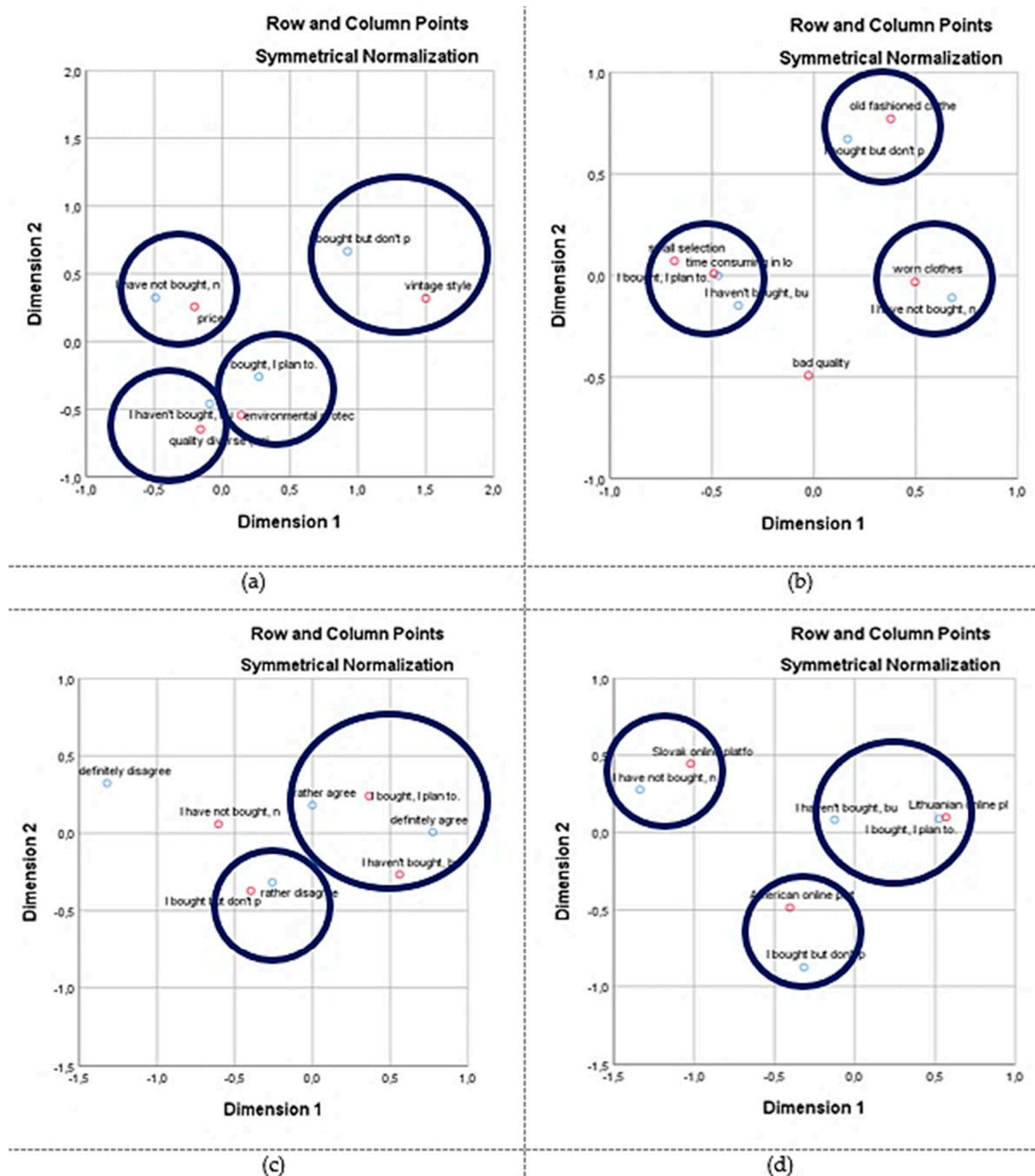
Table 3. Hypothesis.

Null Hypothesis	Pearson Chi-Square	Df	*p*-Value	Cramer's V	N
The online shopping experience with SHC and the main benefits of buying SHC are independent.	21,187 [a]	9	0.012	0.150	315
The online shopping experience with SHC and the obstacles to buying SHC are independent.	22,982 [b]	12	0.155	0.028	320
The online shopping experience with SHC and environmental awareness are independent.	22,843 [c]	9	0.007	0.150	340
The online shopping experience with SHC and the online second-hand platforms used are independent.	35,110 [d]	6	0.000	0.302	193

[a] Two cells (12.5%) have an expected count of less than 5. The minimum expected count is 2.67. [b] Three cells (15%) have an expected count of less than 5. The minimum expected count is 1.91. [c] Two cells (12.5%) have an expected count of less than 5. The minimum expected count is 2.29. [d] One cell (8.3%) has an expected count of less than 5. The minimum expected count is 4.29.

Figure 1a shows that Generation Z consumers with experience of buying used clothes online consider the environmental aspect as the most important benefit of buying used clothes. A high-quality, diverse (unique) assortment is a key advantage of buying second-hand clothing according to Gen Z consumers who plan to buy second-hand clothing on online platforms. In addition, consumers with experience in online shopping but without

planning future shopping consider vintage style as the main advantage. This benefit can be considered the primary reason for buying second-hand clothes in the past. Finally, other consumers without shopping experience do not plan to buy clothes on online platforms, although the price would be a main factor in a potential purchase in the future.

Figure 1. Correspondence maps. (**a**) The online shopping experience with SHC and the main benefits of buying SHC are independent. (**b**) The online shopping experience with SHC and the main obstacle to buying SHC are independent. (**c**) The shopping experience of online shopping for SHC and environmental awareness are independent. (**d**) The online shopping experience with SHC and the online second-hand platform used are independent.

Figure 1b shows that Gen Z consumers who have experience shopping for second-hand clothing online do not plan to continue shopping because the clothing is old-fashioned. On the other hand, consumers shopping online for second-hand clothing consider the time-consuming search for used clothing and the small selection as major barriers to shopping, similar to consumers with a potential interest in online shopping in the future. Finally, we found that consumers without experience in online shopping for second-hand clothes are not interested in online shopping for worn clothes in the future either. Figure 1c shows that consumers with experience in online shopping for second-hand clothes and shoes, together with potential consumers, are more likely to be aware of the environmental impact of shopping for clothes. On the other hand, consumers with online shopping experience not planning a future purchase tend to disagree. Figure 1d shows that Gen Z consumers with experience in online shopping for second-hand clothes prefer future online purchases on the Lithuanian online platform Vinted, similar to potential consumers. On the other hand, consumers without experience with online shopping and who are not planning future purchases prefer the Slovak online platform Bazos. Finally, we find that others prefer the American online platforms Amazon, eBay, or Facebook Marketplace.

4. Discussion

The results are compared with other studies on shopping behavior in the fashion world. We cannot create a global view of Generation Z because the sample describes a group from a selected country.

According to Mahrs et al., this generation is interested in the climate future of the planet. The sustainability factor often outweighs price, style, and availability [51]. The previous studies [52,53] also confirmed that the reuse of clothes was not particularly motivated by environmental concerns, but by financial motives. In the study [54], four specific subgroups of consumers were identified: price-, quality- and style-oriented, brand-oriented, environmental-oriented, and socially conscious consumers. The price, environmental protection, and perceived value were the main predictors of Generation Z's intention to purchase recycled clothing according to [55].

Our research shows that price as a motivating factor is important for more than 56% of respondents, regardless of their online shopping experience with second-hand clothing. One of the reasons may also be the age of the consumers, who may not be financially independent and need help from their parents. Sustainability is important for almost 20% and quality for 10% of respondents. Moreover, we found that 49% of respondents plan to buy second-hand clothes in brick-and-mortar stores in the future, but 33.2% of respondents prefer online shopping.

According to researchers' predictions [56,57], during the last decade, there has been a continuous migration from the brick-and-mortar retail model to online stores, mainly for fashion shopping, in contrast to our result. Second-hand clothing is often considered sustainable consumption, although the biggest disadvantage is used clothing (more than 40%). Second-hand clothing was a major disadvantage for all consumer groups, depending on the shopping experience.

These days, slow fashion is an alternative to fast fashion, and consumers are concerned about shopping mainly because of the quality of clothes. However, the demand for sustainable products is higher because consumers have faster access to information [58]. Chinese consumers generally do not like to wear second-hand clothes, unlike consumers in Western countries [59]. For example, hotel guests never have a problem using hotel materials such as bed linens and towels. Consumers' negative attitudes towards the quality of second-hand clothing may depend on education [60,61].

Social media has a greater influence on consumer behavior than recommendations from friends and family. Young people create relationships with fashion platforms through social networks to support sustainability [62]. These platforms include Vinted, Amazon, eBay, and others.

In our research, over 53% of consumers preferred Vinted when shopping for second-hand clothing. According to the respondents, the time-consuming search for clothes (20.3%) and the quality of the clothes offered (41.8%) are big disadvantages. Those who do not plan to buy clothes through the online platform in the future consider the vintage style to be the main advantage. In addition, these respondents most commonly use American online platforms such as Amazon, eBay, or Facebook Marketplace. The authors [63] confirmed that Gen Z appreciates the ecological attributes of the online second-hand platform Vinted. However, some participants claim that sustainable values are poorly represented in the advertising campaigns of the online platform Vinted.

Consumers without experience in online shopping for used clothes are not interested in online shopping for used clothes in the future either. In India [64], a factor analysis revealed that thrift, convenience, and social requirements are the most dominant purchasing decision attributes for Millennials and Gen Z. Moreover, the results also showed that Gen Z is more enthusiastic about online shopping than Millennials.

In the research [65], the authors suggested that the main challenge in developing awareness about sustainable clothing is to create new ideas about clothing materials. Chen argues that new products do not necessarily encourage purchase. If consumers are innovative, the retailer can implement different designs and novelties. On the other hand, if they are more conservative, the seller may rather prefer utility and environmental protection [66].

In Italy, second-hand shopping is a habit for people who cannot economically afford to buy new clothes; this survey was mainly aimed at Gen Z [67]. Another survey demonstrated that one in three Norwegians will choose second-hand products in the coming years. The main advantages are low prices and the ecological aspect; on the other hand, the disadvantage is the reduced quality of worn clothing [68]. In a Chinese survey, only 10% of respondents indicated their willingness to buy second-hand clothes, and most of them have a negative attitude. This reluctance may be related to good prices for new clothing products in the Chinese market. Younger people were more likely to buy second-hand clothes for pleasure, uniqueness, and environmental reasons [69].

The fashion industry deals with the sustainability of clothing and other challenges such as waste management, water consumption, energy consumption in transportation, and child labor. The high demand for energy and CO_2 emissions are not only related to textile production but also to shipping and air cargo transport [70]. In general, Europeans are most concerned about the environment and slavery. Buddhists and Africans are most affected by forced labor; on the other hand, Americans are indifferent to both concerns [71].

Young people are more aware of the problems with the consumer society and the impact of fast fashion on the environment as well as other factors mentioned above, so they try to some extent to use alternative methods of buying clothes. Their buying behavior may encourage other consumers who are prejudiced against second-hand clothing. Moreover, retailers can also influence purchasing behavior through marketing aimed at educating and raising awareness about fashion sustainability and pointing out the negative consequences of fast fashion. This contribution mainly points to the theoretical knowledge of preferences of the young generation when buying "sustainable fashion" and contributes to other literature on second-hand purchases. For example, consumers may be cautious about buying second-hand in the online space from a safety perspective despite strong social and environmental sensibilities.

These insights can be valuable for policy makers and practitioners preferring a model of sustainable consumption in order to propose common solutions to ensure and support a sustainable economy. The findings of this study can also provide guidance for second-hand sellers (managers) to benchmark their customer service, create a positive attitude, and encourage future purchase intentions [72].

5. Conclusions

The paper focuses on the online behavior of Gen Z fashion shoppers with a focus on sustainability and their preferences. The results show that consumers with shopping experience who plan to buy second-hand clothing along with potential buyers of second-hand clothing in the future are aware of the environmental impact of buying clothes, unlike consumers with no interest in buying second-hand clothing. These consumers and potential buyers of second-hand clothing consider environmental protection and quality, diverse (unique) clothing as key benefits, as opposed to a smaller selection and used clothing. Slovak Gen Z consumers prefer shopping through the Lithuanian online platform Vinted. On the other hand, some consumers no longer plan to buy second-hand clothes because they will be old-fashioned clothes in the future. Finally, we conclude that price, as a motivational factor, plays a key role in consumers fundamentally rejecting second-hand purchases compared to others. These conclusions provide a theoretical basis for understanding the sustainability and shopping requirements of the selected group.

Limits and future research. First, our study focuses on second-hand purchases through the online space or platforms. However, the phenomenon of second-hand shopping is broader, as consumers can buy second-hand in online stores or brick-and-mortar stores. In addition, there is a need to gain a deeper understanding of the motives for participating in online second-hand markets in order to assess the impact of economic, social, and environmental factors that influence the sustainability dimension. Another limitation of this study is the structure of the sample composed of respondents from one country and one generational group. For more comprehensive conclusions, it is important to conduct further research not only at the national but also at the international level. One of the possibilities of the research is to focus on several groups with different levels of environmental awareness for a potential comparison of the buying behavior of Generations X, Y and Z in brick-and-mortar stores and online platforms with second-hand clothes and shoes. This research requires expanding the initial sample to include respondents primarily from Gen X and Y. In addition, we can focus on modeling a categorical variable with multiple variables, such as the benefits or barriers of buying second-hand clothes or shoes. segment using multinomial logistic regression.

Author Contributions: Conceptualization, V.H. and J.M.; methodology, J.M.; formal analysis, V.H. and J.M.; investigation, V.H. and J.M.; resources, V.H.; data curation, V.H. and J.M.; writing—original draft preparation, V.H. and J.M.; writing—review and editing, J.M.; visualization, V.H.; supervision, J.M. All authors have read and agreed to the published version of the manuscript.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data are contained within the article.

Appendix A

Table A1 shows that 102 consumers (more than 32%) with online shopping experience plan to buy second-hand clothes in the future. These consumers see price as a key benefit of shopping for second-hand clothing online. The results show that price is the most important benefit for 193 Gen Z respondents (more than 60% of all). Moreover, we found that the environmental aspect is the second most common benefit of online shopping for second-hand clothes. All other information is shown in Table A1.

Table A2 reveals that 106 consumers (more than 33%) with online shopping experience plan to buy second-hand clothes in the future. These respondents consider worn clothes and a smaller selection to be the biggest barrier to a successful purchase. However, this disadvantage is also the main obstacle for other groups of consumers, regardless of the experience of online shopping for second-hand clothes (almost 45% of the total). Moreover,

the results show that 69 respondents (more than 21%) consider the time-consuming search as the main obstacle when buying second-hand clothes. Finally, we found that 74 Gen Z consumers (less than 25%) without online shopping experience plan to buy worn clothes online in the future.

Table A1. Dataset summary I.

			Main Advantage				
			Price	Quality, Diverse (Unique) Clothing	Vintage Clothing	Environmental Protection	Total
Purchasing experience	I have not bought, nor do I plan to.	Count	79	10	3	17	109
		Expected Count	66.8	11.8	8.3	22.1	109
	I have not bought it, but I plan to.	Count	38	11	4	16	69
		Expected Count	42.3	7.4	5.3	14	69
	I bought it, I plan to.	Count	55	11	10	26	102
		Expected Count	62.5	11	7.8	20.7	102
	I bought it but do not plan to anymore.	Count	21	2	7	5	35
		Expected Count	21.4	3.8	2.7	7.1	35
	Total	Count	193	34	24	64	315
		Expected Count	193	34	24	64	315

Table A2. Dataset summary II.

			Main Obstacles					
			Time-Consuming to Look for Clothes	Worn Clothes	Old-Fashioned Clothes	Small Selection	Bad Quality	Total
Purchasing experience	I have not bought, nor do I plan to.	Count	15	63	7	11	10	106
		Expected Count	22.9	47	6	20.5	9.6	106
	I have not bought it, but I plan to.	Count	20	27	3	17	7	74
		Expected Count	16	32.8	4.2	14.3	6.7	74
	I bought it, I plan to.	Count	27	36	5	28	10	106
		Expected Count	22.9	47	6	20.5	9.6	106
	I bought it but do not plan to anymore.	Count	7	16	3	6	2	34
		Expected Count	7.3	15.1	1.9	6.6	3.1	34
	Total	Count	69	142	18	62	29	320
		Expected Count	69	142	18	62	29	320

Table A3 shows that the majority of respondents (almost 63%) are aware of the environmental impact of shopping for clothes. The results show that 80 out of 114 consumers with online shopping experience and a possible future purchase of second-hand clothes are aware of the environmental impacts, unlike consumers without any interest in shopping for second-hand clothes (more than 46% of respondents from this group).

Table A3. Dataset summary III.

			Environmental Awareness				
			Disagree	Rather Disagree	Rather Agree	Agree	Total
Purchasing experience	I have not bought, nor do I plan to.	Count	13	40	48	13	114
		Expected Count	7	35.2	47.9	23.8	114
	I have not bought it, but I plan to.	Count	1	22	30	23	76
		Expected Count	4.7	23.5	32	15.9	76
	I bought it, I plan to.	Count	4	29	50	30	113
		Expected Count	7	34.9	47.5	23.6	113
	I bought it but do not plan to anymore.	Count	3	14	15	5	37
		Expected Count	2.3	11.4	15.6	7.7	37
Total		Count	21	105	143	71	340
		Expected Count	21	105	143	71	340

Table A4 shows that consumers with experience of buying second-hand clothes prefer the Lithuanian platform Vinted. The results show that consumers without interest in shopping for second-hand clothes or shoes prefer the Slovak online platform. On the other hand, consumers with experience in online shopping for second-hand clothes and not planning another purchase in the future preferred American online platforms such as Amazon, eBay, or Facebook Marketplace. Finally, we found that 103 consumers prefer Vinted (over 53%).

Table A4. Dataset summary IV.

			Online Platform			
			Slovak	Lithuanian	American	Total
Purchasing experience	I have not bought, nor do I plan to.	Count	13	4	11	28
		Expected Count	5.2	14.9	7.8	28
	I have not bought it, but I plan to.	Count	10	23	13	46
		Expected Count	8.6	24.5	12.9	46
	I bought it, I plan to.	Count	9	67	20	96
		Expected Count	17.9	51.2	26.9	96
	I bought it but do not plan to anymore.	Count	4	9	10	23
		Expected Count	4.3	12.3	6.4	23
Total		Count	36	103	54	193
		Expected Count	36	103	54	193

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