

Viewpoint

The Importance of the Vinted Application in Popularizing Sustainable Behavior among Representatives of Generation Z

Agata Balińska ^{1,*} , Ewa Jaska ¹  and Agnieszka Werenowska ² 

¹ Institute of Economics and Finance, Warsaw University of Life Sciences, 02-787 Warsaw, Poland; ewa_jaska@sggw.edu.pl

² Management Institute, Warsaw University of Life Sciences, 02-787 Warsaw, Poland; agnieszka_werenowska@sggw.edu.pl

* Correspondence: agata_balinska@sggw.edu.pl

Abstract: Changes in the fashion market (mainly fast fashion) mean that the negative impact of this sector on the natural and social environment is increasing. An important measure to limit this negative impact is to create more responsible consumer behavior in this market. This applies especially to young consumers, who are the recipients of most fast fashion campaigns, and thanks to new media (including mobile applications), their sustainable behavior can be shaped. The main aim of this study was to identify the features of the useful Vinted mobile application in terms of promoting socially and environmentally sustainable behaviors of Generation Z on the clothing market. At the stage of collecting research material, the desk research and CAWI (computer-assisted web interview) methods were used, and the analysis included, among others, measures of descriptive statistics, a customer satisfaction index (CSI) and a Mann–Whitney Z test. The research was carried out at the turn of 2022/23. The responses of 370 respondents using the Vinted application were qualified for analysis. A convenient selection of the research sample was used. The link to the survey was shared through online channels, including social media. The snowball method was used to obtain respondents. This study shows that less frequent use of the application corresponds to lower ratings of the analyzed parameters. The most important features (attributes) of the application are free application, ease of creating an account and secure payment. The main reason for using the Vinted application is the economic factor (looking for bargains). There is a difference between the CSI value in the group of women and men. To the best of the authors' knowledge, this is the first survey conducted among representatives of Gen Z, which simultaneously took into account satisfaction with using the Vinted application and its impact on popularizing sustainable attitudes.

Keywords: Vinted mobile application; sustainable behavior; Generation Z; dissemination; clothing market



Citation: Balińska, A.; Jaska, E.; Werenowska, A. The Importance of the Vinted Application in Popularizing Sustainable Behavior among Representatives of Generation Z. *Sustainability* **2024**, *16*, 6213. <https://doi.org/10.3390/su16146213>

Academic Editor: Lester Johnson

Received: 27 May 2024

Revised: 29 June 2024

Accepted: 17 July 2024

Published: 20 July 2024



Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The clothing industry has a significant impact on the rapid depletion of natural resources, and in particular, changes in fashion trends have a negative impact on the sustainable use of natural resources. In 2015, the annual turnover in this industry was USD 1.8 trillion, and it is expected to increase by 17%, which means to USD 2.1 trillion, by 2025 [1]. The clothing industry is the second largest after the food industry, which consumes almost 10% of global energy [2]. Consumer choices about clothing style can help reduce greenhouse gas emissions. Estimates indicate that people throw away some clothes after seven or ten wears. Meanwhile, producing a ton of textiles involves the emission of 15–35 tons of CO₂ equivalent [3]. Therefore, it is important to extend the life cycle of clothes.

In order to reduce the negative impact on the environment, CSR campaigns have been and are being conducted by the fashion industry [4,5]. Meanwhile, Jasmin [6] cites the results of the “GFA 2020 Pulse of the Fashion Industry” report and states that 40% of

clothing industry companies take almost no actions for sustainable development. If they do, these are superficial actions coming down to greenwashing. Therefore, in addition to lobbying for a more responsible corporate policy, it is necessary to take actions that change consumers' habits and behavior, an example of which may be mobile applications popular among Gen Z users. Generation Z are people born between 1995 and 2012, and this is the time frame given in most sources [7]. This cohort represents 32% of the world's population [8]. It is assumed that they will have a significant impact on both global sales and environmental behavior, as they will likely face the greatest environmental challenges in the future. This generation is referred to as "C"—connected—"Digital Natives". They grew up in the Internet age, unlike earlier groups (Baby Boomers (BBs, born 1946–1964), Gen X (born 1965–1980) and GenY/Millennials (born 1981–1995)). They easily find and disseminate information found on the Internet and quickly establish contacts on social media. They have the ability to quickly adapt to changes in applications and IT systems [9]. They spend a significant amount of time on social media and streaming platforms looking for content that engages them.

In the authors' opinion, this type of tool may be effective in disseminating sustainable attitudes against the ongoing degradation of the natural environment.

Representatives of the fashion industry increasingly take the position that sustainability has become a must-have trend to alleviate the problem, and sustainable fashion is seen as a necessary market strategy for fashion brands [10,11], presented in their study examples of global brands whose strategies take into account the principles of sustainable development, e.g., Stella McCartney uses organic cotton, ecological fibers and recyclable polyester and cashmere. Similarly, Mara Hoffman uses organic cotton, and Gucci has banned the use of PVC in its products since 2015 and is aiming to achieve a zero carbon footprint in its manufacturing process. In turn, DeFacto implements many environmental projects related to PET bottles, water consumption and textile waste, and brands such as Nike, GAP, Levi's, C&A, Inditex Group and Nude Jeans also conduct research on sustainable development. One of the solutions to the presented problem is to reuse or recycle used clothes [12] and extend the life of materials and products.

The era of excessive consumption is gradually being replaced by the paradigm of responsible consumption. Research by Kirnosova [13] shows that customers are ready to buy brands of producers for whom the well-being of society, its employees and the environment is more important than achieving high financial indicators. This is especially important from the perspective of Gen Z, which is beginning to dominate the group of buyers [14].

Generation Z declares positive pro-ecological attitudes, an example of which is the Youth Climate Strike. One of the main reasons for not engaging in pro-environmental behavior is that traditional media do not cover many environmental issues. It seems that Gen Z, regardless of where they live, is the generation that looks to the future and recognizes the potential costs and consequences of not taking such action. That is why it is so important to constantly analyze their pro-ecological attitudes and behaviors in order to further engage the young generation in environmental protection [15].

The study by Li and Leonas [16] identified the state of knowledge of representatives of the Millennials and Generation Z about environmentally friendly clothing and the need to popularize it. It shows that young consumers (both Millennials and Gen Z) have little knowledge about the impact of clothing production on the environment, and they expand it primarily thanks to quick information channels (e.g., using hashtags). Mobile applications play an important role in stimulating the behavior of Gen Z. They are both a source of information and a channel facilitating the distribution of products, and an element integrating people with similar views, preferences and value systems. This study used the example of the Vinted application. Its beginnings date back to 2008, when 21-year-old Lithuanian Milda Mitkute decided to get rid of her excess clothes and at the same time look for clothes for herself in other people's virtual "closets". So, she established an online platform, to which she added a mobile application in 2012. Its success

is proven by the fact that just a few days after its launch, up to 30% of the platform's users were using it. Currently, the application is used in several countries, and its value is estimated at USD 4.5 billion. The Vinted community in Europe has nearly 50 million registered users, including nearly 4 million people in Poland [17]. This application was downloaded 3.96 million times in October 2022, with the highest number of downloads recorded in January 2021 (4.5 million). In 2021, over 34 million downloads were recorded worldwide [18]. Its popularity is primarily determined by the fact that neither party pays an administration fee, and the buyer's interests are additionally protected.

The Vinted application can also be treated as a business model using network-based market orientation (MO) [19]. The characteristics of Vinted also emphasize the correlation with the protection of the natural environment. This is evidenced by cooperation with the Vaayu platform dealing with carbon footprint tracking. The result of this cooperation is, among others, a survey conducted on a sample of 350,000 users of the Vinted application, which shows that the total carbon dioxide emissions saved by the Vinted platform in 2021 amounted to 453 kilotons of CO₂e (CO₂e—carbon dioxide equivalent), which is equivalent to driving a car 3.6 billion kilometers [20]. Its pro-ecological dimension is reinforced by the message the buyer receives after completing the transaction: "Thank you for making a purchase on Vinted. This item has just been given a second life". Popularizing pro-ecological policy, including using mobile applications, makes young people more willing to identify with the brand, and the benefits of such a phenomenon are described by, among others, Gilal et al. [21] and Laurenti et al. [22].

Research by Jaska et al. [23] shows that Gen Z respondents using the Vinted application rated their activities in the field of sustainable consumption much higher than respondents who indicated that they knew the application but did not use it (i.e., have seen its advertisements in the media, recognized the logo but have not installed it on their smartphones).

The presented issues related to the negative impact of the fashion industry on the environment and the need to change the behavior of young consumers, among others, through mobile applications meant that in the research process, apart from the main goal defined as identifying the features of the useful Vinted mobile application in the field of disseminating socially and environmentally sustainable behaviors of Generation Z in the clothing market, the following specific objectives were specified:

- O1. Recognizing the useful features of the Vinted application and the reasons for using it;
- O2. Determining the relationship between application features and reasons for use;
- O3. Verifying whether the assessment of the attributes of the Vinted application is positively correlated with the frequency of its use;
- O4. Verifying whether the assessment of the attributes of the Vinted application is positively correlated with curiosity as a reason to use this application;
- O5. Recognizing which features of the application are correlated with the reason for its selection, which is to give a second life to clothes;
- O6. Determining the level of satisfaction of using the Vinted application in a group of women and men.

The rest of the article is organized as follows: in the section "Theoretical Foundations and Development of Hypotheses", there is a review of scientific studies, also including research on the Vinted application, although there is a visible shortage of research in this area in the databases. This analysis allowed us to formulate hypotheses. The next part is devoted to the research methodology, which describes the method of conducting our own survey research and the methods of its analysis. Then, the research results are presented, described and discussed. The article ends with a summary section, which also lists the study's limitations and practical and scientific implications.

2. Theoretical Foundations and Development of Hypotheses

Social media, including mobile applications, are increasingly used in the communication strategies of fashion companies, which is why analyses leading to the development of recommendations for these entities regarding the use of these tools are so important and necessary. Kwon and Lee [24], for example, attempted to answer the question of whether fashion brands reflect the global interest in sustainable development in CSR advertising on social media. However, as previous research shows, application attributes are an element that determines users' willingness to use them. Tang et al. [25] pointed to compatibility as a factor driving people to use the app. Shu-Chun and Yen-Ping [26], recognizing the usability of the application, analyzed the experience of retail customers and identified both the critical attributes (quality of software and information) and those that arouse satisfaction among customers (convenience, ease of use). The analyses of Bhullar et al. [27] show that in the category of shopping applications, what is expected above all is easy navigation. However, Lin et al. [28], based on their research, conclude that the quality of software and information as well as data security determine the continuity of using mobile applications. Similarly, research conducted among WhatsApp users shows that data reliability and integrity motivate the use of this tool [29]. This is also confirmed by Kung and Chen [30]. Research by Pavan Kumar and Gowlikar [31], Al-Bayari et al. [32] and Nittas et al. [33] shows that the highly rated feature of the application is the lack of cost of its download and use. The discussion in scientific publications became the basis for formulating the following research hypothesis:

H1. *The highest-rated features of the Vinted app are convenience of use and free of charge.*

Many aspects of mobile application design have been studied so far, but factors such as user behavior and usability are often overlooked [34,35]. Undoubtedly, a useful application is characterized by a higher frequency of use. This problem was addressed in their research by, among others, Ickin et al. [36], who identified factors that influence the frequency of use of commonly used mobile applications. As the study shows, we increasingly use mobile applications and services in everyday activities to meet our needs for information, communication or recreation. However, the user's acceptance of a mobile application depends on at least two conditions: the frequency of use and its adaptation to the user's needs. Due to the above, a detailed hypothesis was formulated:

H1.1. *The frequency of using the Vinted application is positively correlated with the assessment of its parameters.*

Since users evaluate the application mainly in terms of its functionality, intuitiveness and accessibility, curiosity as a reason for using it may be less important. On the other hand, it can be assumed that curiosity may play an important role in the perception of the application. If curiosity is not directly related to the evaluation of parameters, it may affect the overall satisfaction with using the application, which justifies the formulation of a specific hypothesis:

H1.2. *The evaluation of the attributes of the Vinted application is not influenced by curiosity as a reason for using this application.*

It should also be noted that second-hand clothing has become increasingly present in global fashion trends. This is also because consumers seem to be increasingly concerned about the impact of clothing production on their health, the environment and society, and an eco-fashion movement has even emerged [37,38].

In turn, Olah et al. [39], analyzing the behavior of representatives of different generations in the sphere of sustainable clothing behavior, noticed that Gen Z focuses on

leasing jeans, recycling and renting clothes. The observed trends prompted the authors to formulate another hypothesis, namely:

H2. *The main reason for using the Vinted application is the need to “extend the life” of clothes and has a positive impact on the evaluation of the application’s features.*

The above hypothesis can be justified by several factors related to social and economic trends and ecological awareness. Firstly, more and more people have become aware of the fashion industry’s negative impact on the environment. Throwing clothes away contributes to environmental pollution and the waste of resources. In response, more and more people began to look for alternative ways to obtain and dispose of clothes [40]. The Vinted app allows people to sell and buy used clothes. This approach supports sustainable fashion and can be a strong motivator for people who want to contribute to reducing the negative impact of the clothing industry on the environment. Secondly, economic aspects are also important [41,42]. Buying used clothes on the Vinted platform is often cheaper than buying new ones, and the seller gets back some of the money they previously spent.

However, there are few studies analyzing the attitudes of women and men toward mobile applications. Differences between genders are pointed out, for example, by Sung [43], who states that service attributes were significant for attitudes toward mobile shopping only in the male model. It should be noted, however, that the study concerned broadly understood mobile shopping services. In turn, research by Weichbroth [44] shows that gender does not differentiate app ratings. However, this author verified a rather general application, i.e., Gmail. In turn, research on a profiled application such as Booking.com shows that women had higher expectations than men. Balińska and Łukasiak [45] used the CSI index in their study, which was 82.4 for women and 76.2 for men. Also, the research of Štřelák et al. [46] showed that women were more satisfied with the experience of using a travel application compared to men. Mkpojiogu and Hashim [47] indicate that gender had a significant impact on perceived satisfaction with the usefulness of mobile banking applications. However, the study by Correia et al. [48] shows that perceived ease of use and usefulness are the behavioral stimuli of young adult male consumers in using mobile applications when shopping for clothes online.

Research conducted by Hageman et al. [49] and Barrera-Verdugo [50] confirms the desire of young people to promote sustainable clothing consumption, and the results even suggest a strengthening of the relationship between sustainability and clothing quality, especially among older generations and men. It also turns out that for women, clothing production in countries with good working conditions has a positive impact on their sustainable purchasing behavior. The Vinted application was undertaken in the research of Balińska et al. [51]. It shows that women have higher expectations regarding application features than men. Women also declared purchasing used clothes much more often than men. Therefore, the following research hypothesis was put forward:

H3. *The satisfaction level of women using the Vinted application is higher than that of men.*

3. Materials and Methods

Data Collection Process

The research process was carried out according to the stages listed in Table 1.

Various methods of obtaining and analyzing the collected material were used in the research process. At the stage of collecting research material, the desk research method was used. These were studies on the impact of the clothing industry on the natural and social environment, responsible behavior of GenZ when purchasing clothes, new media used in the process of obtaining information and popularizing sustainable behavior and the research methods which were used. In addition to scientific publications, popular publications and podcasts, which are an important source of information among young

consumers, were used as a valuable and reliable source of information [52]. An inductive–deductive approach was used to verify the material obtained in this way.

Table 1. The course of the research process.

Steps	Detailing
1	Analysis of scientific studies on the impact of the clothing industry on the natural and social environment
2	Analysis of sustainable behaviors in the purchase of clothes by representatives of Generation Z
3	Analysis of methods used in research on the role of applications in stimulating sustainable behavior
4	Determining the assumptions for own survey research
5	Development of a survey questionnaire
6	Pilot studies
7	Analysis of the results of the pilot studies, improvement of the survey questionnaire
8	Proper research
9	Verification of the collected material
10	Selection of statistical methods, analysis and development
11	Interpretation of results

Concentrating the research only on Gen Z was dictated by the freedom of movement of the young generation in the world of new media and digital technology and openness to the world. In this area, there is no difference between representatives of Gen Z in Poland and other European countries, which means that the presented results can be discussed with research conducted in other countries [53]. Another substantive premise is related to the research issues. Mobile applications should meet the needs of a specific group of consumers, especially in terms of their functional features [54].

The CAWI (computer-assisted web interviewing) method was used in the research [55]. It is a form of survey that the respondent completes online, using a computer or mobile device, and the entire process is carried out using special software. This method is used in market and opinion research because it allows for easy and quick collection of data from a large number of respondents, which allows obtaining a representative picture of society or market opinion [56].

The research was carried out at the turn of 2022/23 and is part of the research project on Environmentally and Socially Sustainable Behavior of Generation Z Stimulated by Mobile Applications (Nds/545437/2022/2022). The independent variables adopted in this study included primarily the sociodemographic characteristics of respondents and the frequency of using the Vinted application, and the dependent variables included the importance of the features of this application.

The questionnaire consisted of 10 substantive questions, including a filter question allowing for limiting the research only to respondents who use mobile applications and an alternative question allowing for verification of knowledge and use of the Vinted application. The features (attributes) of the application were verified, i.e., ease of use, free application, secure payment, intuitive use, compatibility with various systems, frequent updates and new items, information security and personal data protection, buyer/seller protection, advertising, ability to choose the delivery method, possibility of adding recommendations, wide range of products, ease of setting up an account and suggestions regarding the price range for the seller. Their selection was preceded by a literature analysis and verified in pilot studies conducted in 2021. The next two questions allowed for the calculation of the CSI (customer satisfaction index). This is a quite popular indicator that

allows measuring the level of satisfaction of customers using specific goods or services. In our research, it was used to measure respondents' satisfaction in using the Vinted application. Satisfaction should encourage the use and, at the same time, the purchase of second-hand products (mainly clothes), and this is one of the manifestations of sustainable behavior. These questions use a 5-point Likert scale, which has also found acceptance in research, for example, Chikkabagewadi et al. [57]. The remaining questions are closed single- or multiple-choice questions and one open question. From the point of view of identifying sustainable behavior, the question about the reasons for using the Vinted application was important. The survey responses included, among others, "concern for the natural environment" and the desire to "give a second life to clothes", but also "curiosity", which, if properly satisfied, can make respondents loyal to this application.

Convenience sampling was used [58]. The link to the survey was shared through online channels, including social media. The snowball method was used to obtain respondents [59], i.e., respondents were also asked to share a link to the questionnaire on their own social media profiles.

The Process of Analyzing the Collected Material

In the analysis of the collected material, the customer satisfaction index (CSI) was used, which allows to indicate customer satisfaction in numerical terms. The methodology of the indicator requires, first of all, the determination of satisfaction criteria—attributes of the product or service that will be assessed (exploration phase). Secondary data, expert opinion, panel methods or pilot studies can be used at this stage. In the main study, the criteria are evaluated by the respondents in terms of their importance and degree of fulfillment. On the basis of the importance ratings, the weights of individual criteria are determined, and the CSI itself is a weighted sum of the weights determined and the ratings of the criteria.

The CSI is calculated using the following formula [45]:

$$CSI = \sum_{i=1}^N W_i \cdot C_i$$

where

CSI—customer satisfaction result;

i—successive number of the tested requirement;

N—the number of requirements specified in the analysis;

W_i—significance factor of the weight of the *i*-th requirement;

C_i—assessment of customer satisfaction with the *i*-th requirement.

The obtained results can be analyzed in absolute values [60], which makes it difficult to compare results when using scales with different scopes. This problem was pointed out in their research by Yadav et al. [61]. These authors, analyzing the research carried out with the use of various scales, indicated that the percentage scale is a good solution. Such a scale is used in CSI [62,63]. This was also utilised in this study, assuming the following interpretation: 0–40%—very bad (extremely dissatisfied customer); 40–60%—wrong (dissatisfied customer); 60–75%—average (there are some customer satisfaction issues); 75–90%—good (there are few problems with customer satisfaction); 90–100%—very good (highly satisfied customer). The customer satisfaction index is quite often used in scientific studies, including by Skowron [64], Pukas [65], Przybytniowski [66] and German and Cabacungan [53]. The analysis also used the Spearman's rank correlation coefficient and the Mann–Whitney Z test (an example of a nonparametric test).

4. Results

4.1. Sociodemographic Characteristics of the Respondents

The Vinted application was used by 370 respondents, and their sociodemographic characteristics are presented in Table 2.

Table 2. Sociodemographic characteristics of the respondents.

Variables		%, N = 370
Gender	Women	79.3
	Men	20.2
	I don't want to point	0.5
	Village	27.8
	Town up to 50 thousand	18.3
	Town 50–100 thousand	7.62
	Town 100–500 thousand	4.4
	City over 500 thousand	41.9
Number of people in the household	One	10.9
	Two	15.5
	Three	25.9
	Four	31.1
	Five+	16.6
Income per person in the household (in PLN net)	Up to 1500	16.1
	1500–3000	46.6
	Over 3000	37.3

Source: own research.

The research was dominated by women, which is typical for social research [67]. The respondents most often lived in large cities. More than half declared households of three and four people. The financial possibilities of the respondents were quite diverse; the largest group indicated that the income per person in the household was PLN 1500–3000 (EUR 349–698).

The frequency of using the application declared by respondents varied. In total, 42.1% of respondents used it once every few months, 29.7% several times a month, 21.4% several times a week and 6.8% every day. It should be noted that the term “use” does not mean purchasing or offering for sale clothing, footwear or accessories.

4.2. Results and Discussion

Respondents assessed the importance of the individual features (attributes) of the tested application (Table 3).

Among the verified features of the application, respondents rated the highest the fact that it was free and convenient to use, which was reflected in the assessment of such features as ease of setting up an account, ease of use and intuitiveness of use. Thus, H1 was positively verified. Also, the research of Balińska et al. [51] carried out among representatives of Gen Z shows that the optimal application should, above all, be easy to use and contain reliable information. Kim and Lee [68] and Lee and Cho [69] also drew attention to the economic factor, stating that paying fees for using the application causes the users to be dissatisfied. However, the need to ensure security in the purchasing relationship (and this is what the Vinted application is based on) was pointed out by Kowalczyk [70]. The economic factor was also positively verified in the research of Palomo–Dominguez et al. [71], and searching for price opportunities was determined as the most frequently indicated reason for using the Vinted application. Park [72] also draws attention to the ease and speed of use of a mobile shopping application for fashion products. It was also noted that groups with a high level of market knowledge had a higher perception of the features of the fashion mobile application than groups with a low level of market knowledge. It was also emphasized that the attributes of fashion mobile applications and market knowledge are useful variables for understanding the behavior of mobile consumers.

Table 3. Significance of individual application parameters and their dependence on the frequency of use.

Characteristics	Descriptive Statistics					Correlation with Frequency of Use	
	M	Me	Q1	Q3	SD	R Spearman	p
Ease of use	4.37	5	4	5	0.73	−0.297	0.000
Free application	4.76	5	5	5	0.55	−0.167	0.001
Secure payment	4.39	5	4	5	0.87	−0.297	0.000
Intuitive use	4.20	4	4	5	0.84	−0.212	0.000
Compatibility with various systems	3.95	4	3	5	0.89	−0.115	0.027
Frequent updates, new items	3.43	3	3	4	0.99	−0.091	0.083
Information security/personal data protection	4.15	4	4	5	0.94	−0.292	0.000
Buyer/Seller protection	4.12	4	4	5	1.05	−0.254	0.001
Advertising	3.35	3	3	4	1.13	−0.190	0.002
Possibility to choose delivery method	4.27	4	4	5	0.82	−0.158	0.000
Possibility to add a recommendation	4.20	4	4	5	0.92	−0.387	0.001
Wide range of products	4.43	5	4	5	0.81	−0.244	0.001
Ease of creating an account	4.58	5	4	5	0.68	−0.184	0.001
Price range suggestions for the seller	3.93	4	3	5	1.07	−0.205	0.001

M—average, Me—Median, Q1—lower quartile, Q3—upper quartile, SD—standard deviation, *p*—statistical significance of the test result, significant result at *p* < 0.05. Source: own research.

According to the adopted detailed hypothesis H1.1, the relationship between the frequency of using the application and the importance of individual features (attributes) describing the application was verified. Using the Spearman's index, it was shown that less frequent use of the application corresponds to lower ratings of the analyzed attributes (at the same time, more frequent use of the application corresponds to higher ratings), with the strongest relationship noted in the case of the variable “possibility to add recommendations” (−0.387) (Table 3). Therefore, hypothesis H1.1 has been verified positively.

In order to verify the detailed hypothesis H1.2, the Mann–Whitney Z test was used. There was a statistically significant difference between the assessment of the individual features of the application by people who indicated “curiosity” as the reason for using it or did not indicate the reason (Table 4).

Table 4. Differences in the evaluation of the features (attributes) of the application depending on whether “curiosity” is indicated or not among the reasons for using the application.

Application Parameters	“Curiosity”	M	Me	Q1	Q3	SD	Z, <i>p</i>
Ease of use	Yes	4.14	4.0	4.0	5.0	0.783	Z = 3.257
	No	4.44	5.0	4.0	5.0	0.703	<i>p</i> = 0.001
Free application	Yes	4.70	5.0	4.0	5.0	0.535	Z = 1.964
	No	4.78	5.0	5.0	5.0	0.553	<i>p</i> = 0.049
Secure payment	Yes	4.16	4.0	4.0	5.0	0.994	Z = 2.777
	No	4.46	5.0	4.0	5.0	0.825	<i>p</i> = 0.006
Information security and personal data protection	Yes	3.90	4.0	3.0	5.0	1.078	Z = 2.357
	No	4.22	4.0	4.0	5.0	0.887	<i>p</i> = 0.018
Buyer and seller protection	Yes	3.86	4.0	3.0	5.0	1.211	Z = 2.226
	No	4.19	4.0	4.0	5.0	0.985	<i>p</i> = 0.026
Possibility to choose delivery method	Yes	4.08	4.0	4.0	5.0	0.927	Z = 2.048
	No	4.32	4.0	4.0	5.0	0.785	<i>p</i> = 0.041

M—average, Me—median, Q1—lower quartile, Q3—upper quartile, SD—standard deviation, Z—Mann–Whitney test result, *p*—statistical significance of the test result, significant result at *p* < 0.05. Source: own research.

Respondents who did not indicate curiosity as the reason for using the application rated the application parameters (attributes) listed in Table 4 higher than those who indicated curiosity as the reason for using the application, as indicated by the values of the descriptive statistics. There was no difference in the following parameters of the application: intuitive use, compatibility with various systems, frequent updates, advertisements, the ability to add recommendations, a wide range of products, ease of setting up an account, suggestions regarding the price range for the seller; therefore, they are not included in Table 4.

Hypothesis H1.2 has been confirmed.

In the multiple-choice question, the main reasons for using the application were mentioned by respondents as looking for price bargains (81.2%), the desire to give clothes a second life (51.4%), searching for original products (38.8%), caring for the natural environment (28.0%), curiosity (27.4%) and influence of friends who also use it (11%). The ranking indicates that the first part of the H2 hypothesis, “the main reason for using the Vinted application is the need to “extend the life” of clothes”, was not confirmed because the economic factor was more important for the respondents. A high rating for the reason defined as “the desire to give clothes a second life” allowed the second part of the hypothesis to be verified. For this purpose, the Mann–Whitney Z test was used.

Respondents who mentioned the desire to “give clothes a second life” (i.e., extend their life cycle) as the reason for using the application rated significantly higher than those who did not indicate this reason for the parameters of the Vinted application listed in Table 5 (different dimensions of safety, comfort at the stage of creating the account and the management of it).

Table 5. Differences in the appraisal of application parameters (attributes) depending on the indication or no indication among the reasons for using the application of “willingness to give clothes a second life”.

Application Parameters	The Desire to Give a “Second Life” to Clothes	M	Me	Q1	Q3	SD	Z, p
Ease of use	Yes	4.48	5.0	4.0	5.0	0.639	Z = −2.932
	No	4.23	4.0	4.0	5.0	0.814	p = 0.0034
Secure payment	Yes	4.51	5.0	4.0	5.0	0.777	Z = −2.918
	No	4.24	5.0	4.0	5.0	0.964	p = 0.0035
Information security and personal data protection	Yes	4.28	4.0	4.0	5.0	0.868	Z = −3.082
	No	3.98	4.0	3.0	5.0	1.003	p = 0.0021
Buyer and seller protection	Yes	4.28	5.0	4.0	5.0	0.912	Z = −3.114
	No	3.91	4.0	3.0	5.0	1.168	p = 0.0018
Possibility to choose delivery method	Yes	4.38	5.0	4.0	5.0	0.786	Z = −2.8864
	No	4.14	4.0	4.0	5.0	0.853	p = 0.0039
Possibility to add a recommendation	Yes	4.28	5.0	4.0	5.0	0.894	Z = −1.965
	No	4.10	4.0	4.0	5.0	0.937	p = 0.0494
Easiness to set up an account	Yes	4.66	5.0	4.0	5.0	0.586	Z = −2.227
	No	4.48	5.0	4.0	5.0	0.774	p = 0.0259

M—average, Me—median, Q1—lower quartile, Q3—upper quartile, SD—standard deviation, Z—Mann–Whitney test result, p—statistical significance of the test result, significant result at $p < 0.05$. Source: own research.

The higher ratings of the application attributes listed in Table 5 by people for whom it is important to extend the life of clothes are very important in the context of maintaining and promoting environmentally and socially sustainable behavior. It indicates that the Vinted application serves the purpose of popularizing desired behaviors. No difference was noted in the case of only a few features of this application, i.e., free application, intuitive

use, compatibility with various systems, frequent updates, advertisements, wide range of products and suggestions regarding the price range for the seller, so they are not included in Table 5. Therefore, the second part of the hypothesis H2/detailed hypothesis H2 has been partially confirmed.

It is worth noting that there were no statistically significant differences in the assessment of the individual features of the application between respondents who indicated the following reasons for using the application, “looking for price opportunities”, “friends using the application” and “looking for original products”, and those who did not indicate these reasons. There were also no statistically significant differences in the assessments of the individual features of the application depending on the respondents’ place of residence, the number of people in the household and the level of income.

4.3. Customer Satisfaction Index (CSI) Value

For an application to fulfill its functions, it must meet the expectations of users. One of the measures that allows to verify the level of satisfaction is the CSI. Therefore, the next stage of the analysis of the collected material was the calculation of the customer satisfaction index (CSI) for the Vinted application (Table 6). In this part of the study, hypothesis H3 was verified.

Table 6. Customer satisfaction index (Vinted).

Attributes	Parameter Expectations	Weight Points	Evaluation of Vinted Application Parameters	Indicator
Ease of use	3.90	7.38	4.37	0.32
Free application	3.87	7.33	4.75	0.35
Secure payment	3.84	7.26	4.40	0.32
Intuitive use	3.78	7.16	4.21	0.30
Compatibility with various systems	3.76	7.12	3.95	0.28
Frequent updates, new items	3.77	7.13	3.46	0.25
Information security/personal data protection	3.85	7.29	4.16	0.30
Buyer/Seller protection	3.79	7.17	4.13	0.30
Low advertising intensity	3.71	7.03	3.39	0.24
Possibility to choose delivery method	3.74	7.08	4.26	0.30
Possibility to add a recommendation	3.65	6.91	4.20	0.29
Wide range of products	3.83	7.24	4.42	0.32
Ease of creating an account	3.70	6.99	4.56	0.32
Price range suggestions for the seller	3.65	6.90	3.93	0.27
Total	52.84	100		4.16
The height/value of the CSI indicator				83.2%

Source: own research.

The value of the CSI indicator at the level of 83.2%, according to the adopted interpretation, means satisfaction, although a few areas require improvement. The analysis of the average values for the individual parameters of the application at the level of expectations and assessment in relation to the Vinted application shows that for most of the parameters the average value at the experience level was higher the expectations, and the highest difference was in the “free application” and “ease of creating an account” parameters. Only in the case of the parameters “frequent updates, new items” and “low advertising intensity”, the respondents’ experience was on average lower than their expectations in this regard.

It was also verified whether there is a difference between the CSI value depending on sex, place of residence, number of people in the household and the amount of income. The differentiation of the CSI value depending on sex was verified with the Mann–Whitney Z test, and it was shown that this difference is statistically significant ($Z = 2.356$, $p = 0.0185$). A significantly higher CSI result was recorded in the group of women (average $M = 85.13$ with median $Me = 85.93$) than in the group of men ($M = 81.07$, $Me = 83.12$). Verification with

a Chi-squared test showed that the distribution of the results describing the CSI Vinted level in the group of women was different than in the group of men (Chi-squared 7.815; $p = 0.02009$). Among women, there are more respondents with a higher level of CSI than among men. This may be due to the higher involvement of women in communication in new media [73]. It is worth emphasizing that there was no significant difference depending on the place of residence, the amount of income and the number of people in households.

There are no research results found in the literature confirming the existence of a difference between the CSI value for the Vinted application in the group of women and men, although Okazaki and Hirose [74] found that women are more likely to actively use mobile applications than men. In turn, Vallespín et al. [75] found that gender influences the use of mobile devices for booking tourism products. However, this area requires further research using various measurement methods.

5. Conclusions, Limitations and Future Research Directions

5.1. Summary

The conducted research constitutes an important addition to knowledge in the area of ways to reduce the negative impact of the fashion industry on the natural and social environment through the use of mobile applications. So far, the aspect of using applications to popularize sustainable behaviors has not been widely analyzed in the literature. The authors conducted research on the Vinted application to identify the main features of a useful mobile application in promoting socially and environmentally sustainable behaviors of Gen Z in the clothing market.

In the ProQuest database as of 26 March 2023, only 138 articles were found in English for the last 5 years with the keywords: mobile applications, reducing the negative impact of the fashion industry. This is undoubtedly one of the reasons why research should be continued in the characterized area.

Young consumers are more likely to engage in environmental activities. Despite this, it is necessary to constantly analyze their attitudes and sustainable behavior, as well as to take action to involve the young generation even more in environmental protection. Currently, social interest in sustainable development is growing, but still to an insufficient extent, and therefore subsequent analyses in this field fill the existing research gap. This applies, among others, to the area of communication with stakeholders of clothing companies and the use of mobile applications for this purpose. So far, research has focused mainly on the quality aspects of application software and e-commerce sites, and their usability has not been analyzed, which is another dimension of the existing research gap.

Today's young consumers are demanding a reduction in the environmental impact of production, but concern for the environment is not the main reason for using the Vinted app. The main reason for using the Vinted app is the economic factor (looking for bargains). The most important parameters of the application are free application, ease of creating an account and secure payment.

5.2. Limitations and Recommendations for the Future

The research carried out is not free from limitations, which include the following:

- limiting the research to Polish respondents only;
- omission of other applications performing a similar function, e.g., OLX;
- changes in the Vinted application, e.g., filtering criteria, were not included in the study.

In future research, it would be important to

- expand the research to include representatives of other countries;
- expand the research to include other applications, which would enable comparisons to be made;
- establish cooperation with the application operator to take into account changes planned for the application in future research.

5.3. Implications

The conducted analysis prompted the authors to formulate the following practical and scientific implications. The practical ones include the following:

- Creators of mobile applications should improve their usability, including data integrity and speed, as well as data and payment security;
- The research results can be used by the clothing industry to improve communication with stakeholders and use social media, including mobile applications, in their marketing activities;
- The use of mobile applications in the sustainable distribution of products is justified;
- It is necessary to involve the young generation of application users in popularizing sustainable behavior.

On the other hand, among the scientific implications, it should be pointed out that the research gap regarding the relationship between the use of a mobile application and sustainable behavior should be filled, which the authors tried to fill at least partially.

This study shows that less frequent use of the application corresponds to lower ratings of the analyzed parameters, and therefore it would be reasonable to repeat the study in the group of people who frequently use the application.

It should be emphasized that research on the role of applications in stimulating the sustainable behavior of consumers of various goods and services, including clothing, is still at the forefront of scientific research. Both the advantages and limitations of the research presented in this article should be helpful to other researchers interested in these issues. In the authors' opinion, the scientific advantage of this study is the attempt to show a mobile application acting as a sales platform in the context of environmentally and socially responsible behavior. This prompted the authors to formulate the thesis that tools (applications) that are not communicated to recipients as pro-social and pro-environmental can also play an important role in popularizing sustainable behavior.

Author Contributions: Conceptualization, A.B., E.J. and A.W.; methodology, A.B., E.J. and A.W.; validation, A.B., E.J. and A.W.; formal analysis A.B., E.J. and A.W.; investigation, A.B., E.J. and A.W.; resources, A.B., E.J. and A.W.; data curation, A.B., E.J. and A.W.; writing—original draft preparation, A.B., E.J. and A.W.; writing—review and editing, A.B., E.J. and A.W.; visualization, A.B., E.J. and A.W.; supervision, A.B.; project administration, A.B.; funding acquisition, A.B., E.J. and A.W. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the program of the Ministry of Education and Science (Poland) called “Science for Society” NdS/545437/2022/2022, total value of the project PLN 321,632.00.



Institutional Review Board Statement: Ethical review and approval were waived for this study. This study was conducted in accordance with the Declaration of Helsinki, which is applied in Polish universities, including WULS. Respondents were assured of anonymity. They took part in the survey voluntarily. They could resign from the survey at any time. They were not asked for personal or sensitive data.

Informed Consent Statement: Consent was waived due to the fact that the study used an anonymous survey questionnaire sent through publicly available online channels. Respondents completed the questionnaire voluntarily and were able to opt out of participating in this study at any stage. The questionnaire complied with the RODO rules of the European Union countries.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

References

1. Thorisdottir, T.S.; Johannsdottir, L. Corporate social responsibility influencing sustainability within the fashion industry. A systematic review. *Sustainability* **2020**, *12*, 9167. [CrossRef]
2. Kuo, T.-C.; Hsu, C.-W.; Huang, S.H.; Gong, D.C. Data sharing: A collaborative model for a green textile/clothing supply chain. *Int. J. Comput. Integr. Manuf.* **2014**, *27*, 266–280. [CrossRef]
3. Spiller, J. Jaki Jest Ślad Węglowy Statystycznego Polaka? Jak Go Zmniejszyć? 2021. Available online: <https://www.teraz-srodowisko.pl/aktualnosci/slady-weglowy-statystyka-jak-zmniejszyc-11155.html> (accessed on 15 March 2024).
4. Caniato, F.; Caridi, M.; Crippa, L.; Moretto, A. Environmental sustainability in fashion supply chains: An exploratory case based research. *Int. J. Prod. Econ.* **2012**, *135*, 659–670. [CrossRef]
5. Chan, H.-L.; Wei, X.; Guo, S.; Leung, W.-H. Corporate social responsibility (CSR) in fashion supply chains: A multi-methodological study. *Transp. Res. Part E Logist. Transp. Rev.* **2020**, *142*, 102063. [CrossRef]
6. Jasmin, M.C. ‘Everything’s urgent’: How Global Fashion Agenda Prioritizes Industry’s Impacts. Sourcing Journal (Online). 2022. Available online: <https://www.proquest.com/trade-journals/everythings-urgent-how-global-fashion-agenda/docview/2673443847/se-2> (accessed on 29 June 2024).
7. Sakdiyakorn, M.; Golubovskaya, M.; Solnet, D. Understanding Generation Z through collective consciousness: Impacts for hospitality work and employment. *Int. J. Hosp. Manag.* **2021**, *94*, 102822. [CrossRef]
8. Djafarova, E.; Bowes, T. Instagram made Me buy it: Generation Z impulse purchases in fashion industry. *J. Re-Tailing Consum. Serv.* **2020**, *59*, 102345. [CrossRef]
9. Werenowska, A.; Rzepka, M. The Role of Social Media in Generation Y Travel Decision-Making Process (Case Study in Poland). *Information* **2021**, *11*, 396. [CrossRef]
10. Pasquarelli, A. How Sustainability in Fashion Went from the Margins to the Mainstream, AdAge. 2019. Available online: <https://adage.com/article/cmo-strategy/sustainability-fashion-mainstream/316828> (accessed on 29 June 2024).
11. Öndoğan, E.N.; Öndoğan, Z.; Topuzoğlu, B. A study on the investigation of sustainability practices of global brands in the fashion market. *Ege Akad. Bakis* **2022**, *22*, 393–411. [CrossRef]
12. Chen, H.-L.; Burns, L.D. Environmental Analysis of Textile Products. *Cloth. Text. Res. J.* **2006**, *24*, 248–261. [CrossRef]
13. Kirnosova, M. Authenticity of brands in the marketing commodity policy of the enterprise. *VUZF Rev.* **2021**, *6*, 78–89. [CrossRef]
14. Khan, A.N. Elucidating the effects of environmental consciousness and environmental attitude on green travel behavior: Moderating role of green self-efficacy. *Sustain. Dev.* **2024**, *32*, 2223–2232. [CrossRef]
15. Dąbrowski, L.S.; Środa-Murawska, S.; Smoliński, P.; Biegańska, J. Rural–Urban divide: Generation Z and pro-environmental behaviour. *Sustainability* **2022**, *14*, 16111. [CrossRef]
16. Li, J.; Leonas, K.K. The impact of communication on consumer knowledge of environmentally sustainable apparel. *J. Fash. Mark. Manag.* **2022**, *26*, 622–639. [CrossRef]
17. Businessinsider. 2021. Available online: <https://businessinsider.com.pl/biznes/vinted-historia-sukcesu-litewskiej-firmy/dwl55ff> (accessed on 6 July 2024).
18. Statista. 2023. Available online: www.statista.com/statistics/1308579/vinted-app-downloads/ (accessed on 29 June 2024).
19. Hyder, A.S.; Sundström, A.; Chowdhury, E.H. Knowledge of Network-Based Market Orientation for the Internationalization of Disruptive Innovation in SMEs. *Cent. Eur. Manag. J.* **2022**, *30*, 36–60. [CrossRef]
20. Climate Impact Report Summary. 2023. Available online: https://press-center-static.vinted.com/Climate_Impact_Report_Summary_PL_2023_9502afdf92.pdf (accessed on 29 June 2024).
21. Gilal, F.G.; Memon, A.A.; Gilal, N.G.; Gilal, R.G.; Memon, A.A. Enhancing Service Brand Passion through Self-Congruity: The Moderating Role of Gender and Age. *Cent. Eur. Manag. J.* **2022**, *30*, 83–102. [CrossRef]
22. Laurenti, R.; Sinha, R.; Singh, J.; Frostell, B. Towards Addressing Unintended Environmental Consequences: A Planning Framework. *Sust. Dev.* **2016**, *24*, 1–17. [CrossRef]
23. Jaska, E.; Werenowska, A.; Balińska, A. Environmentally and Socially Sustainable Behaviors of Generation Z in Poland Stimulated by Mobile Applications. *Energies* **2022**, *15*, 7904. [CrossRef]
24. Kwon, K.; Lee, J. Corporate social responsibility advertising in social media: A content analysis of the fashion industry’s CSR advertising on instagram. [Corporate social responsibility advertising]. *Corp. Commun.* **2021**, *26*, 700–715. [CrossRef]
25. Tang, J.; Zhang, B.; Akram, U. User willingness to purchase applications on mobile intelligent devices: Evidence from app store. [Applications on mobile intelligent devices]. *Asia Pac. J. Mark. Logist.* **2020**, *32*, 1629–1649. [CrossRef]
26. Ho, S.C.; Hsu, Y.P. Paving the way for digital transformation: Investigate customer experiences of using mobile apps. *Pac. Asia J. Assoc. Inf. Syst.* **2022**, *14*, 3. [CrossRef]
27. Bhullar, A.; Gill, P.S. Mobile shopping application usability: An empirical study on factors affecting continued intention to use and mobile application Loyalty. *J. Mark. Manag.* **2019**, *18*, 33–50.

28. Lin, P.; Liang, T.; Huang, H.; Li, Y. Design quality, relationship intimacy and continuance intention of mobile apps: An extension to the is success model. *J. Electron. Commer. Res.* **2021**, *22*, 266–284. Available online: <https://www.proquest.com/scholarly-journals/design-quality-relationship-intimacy-continuance/docview/2606937177/se-2> (accessed on 29 June 2024).
29. Yadav, P.; Singh, N. Predicting consumer satisfaction towards WhatsApp based on quality factors. *IUP J. Manag. Res.* **2020**, *19*, 24–44. Available online: <https://www.proquest.com/scholarly-journals/predicting-consumer-satisfaction-towards-whatsapp/docview/2434044916/se-2> (accessed on 29 June 2024).
30. Kung, P.; Chen, C. Usability of mobile applications: A concept analysis in health promotion. *Taiwan Gong Gong Wei Sheng Za Zhi* **2022**, *41*, 142–155. [\[CrossRef\]](#)
31. Pavan Kumar, P.; Gowlikar, D. Analysis of Mobile App Usage Preferences of University Students in Eastern Bhutan. 2020. Available online: <https://ssrn.com/abstract=3808491> (accessed on 29 June 2024). [\[CrossRef\]](#)
32. Al-Bayari, O.; Sadoun, B.; Shatnawi, N. An Internet and wireless networking-based water pipes web application for fault reporting. *Int. J. Commun. Syst.* **2020**, *33*, e4363. [\[CrossRef\]](#)
33. Nittas, V.; Mütsch, M.; Braun, J.; Puhan, M.A. Self-monitoring app preferences for sun protection: Discrete choice experiment survey analysis. *J. Med. Internet Res.* **2020**, *22*, e18889. [\[CrossRef\]](#) [\[PubMed\]](#)
34. Durgekar, S.R.; Rahman, S.A.; Naik, S.R.; Kanchan, S.S.; Srinivasan, G. A Review Paper on Design and Experience of Mobile Applications. *EAI Endorsed Trans. Scalable Inf. Syst.* **2024**, *11*, 3. [\[CrossRef\]](#)
35. Caro-Álvaro, S.; García-López, E.; Garcia-Cabot, A.; Mavri, A. Measuring the Effects of Usability Recommendations for Mobile Instant Messaging Apps on User Performance and User Behaviour. *Int. J. Hum. Comput. Interact.* **2024**. Available online: <https://www.tandfonline.com/toc/hihc20/40/14?nav=tocList> (accessed on 29 June 2024). [\[CrossRef\]](#)
36. Ickin, S.; Wac, K.; Fiedler, M.; Janowski, L.; Hong, J.H.; Dey, A.K. Factors influencing quality of experience of commonly used mobile applications. *IEEE Commun. Mag.* **2012**, *50*, 48–56. [\[CrossRef\]](#)
37. Pencarelli, T.; Viktória, A.T.; Škerháková, V.; Valentiny, T.; Fedorko, R. Luxury products and sustainability issues from the perspective of young italian consumers. *Sustainability* **2020**, *12*, 245. [\[CrossRef\]](#)
38. Heinze, L. Fashion with heart: Sustainable fashion entrepreneurs, emotional labour and implications for a sustainable fashion system. *Sustain. Dev.* **2020**, *28*, 1554–1563. [\[CrossRef\]](#)
39. Olah, J.; Tudor, A.T.; Pashkus, V.; Alpatov, G. Preferences of central european consumers in circular economy. *Ekonom. Manazerske Spektrum* **2021**, *15*, 99–110. [\[CrossRef\]](#)
40. Camacho-Otero, J.; Nilstand Pettersen, I.; Boks, C. Consumer engagement in the circular economy: Exploring clothes swapping in emerging economies from a social practice perspective. *Sustain. Dev.* **2020**, *28*, 279–293. [\[CrossRef\]](#)
41. Thomas, D. Fashionopolis. In *Why What We Wear Matters*; Penguin Books: London, UK, 2020.
42. Schlossberg, T. Inconspicuous Consumption. In *The Environmental Impact You Don't Know You Have*; Little, Brown & Company: Boston, MA, USA, 2022.
43. Sung, H. A Study on the Determinants of Attitude toward and Intention to Use Mobile Shopping through Fashion Apps -Comparisons of Gender and Age Group Differences. *J. Korean Soc. Cloth. Text.* **2013**, *37*, 1000–1014. [\[CrossRef\]](#)
44. Weichbroth, P. An Empirical Study on the Impact of Gender on Mobile Applications Usability. *IEEE Access.* **2022**, *10*, 119419–119436. [\[CrossRef\]](#)
45. Balińska, A.; Lukasiak, M. Wybrane metody wskaźnikowe w ocenie aplikacji Booking.com. *Tur. I Rozw. Reg.* **2023**, *19*, 5–15. [\[CrossRef\]](#)
46. Střelák, D.; Škola, F.; Liarokapis, F. Examining User Experiences in a Mobile Augmented Reality Tourist Guide. In Proceedings of the 9th ACM International Conference on Pervasive Technologies Related to Assistive Environments, Corfu Island, Greece, 29 June–1 July 2016; pp. 1–8.
47. Mkpojiogu, E.O.; Hashim, N.L. The impact of users' age, gender, education, and experience on their satisfaction perception of m-banking app's usability. *Malays. Acad. Libr. Malays. Tech. Rep.* **2017**, 13–15.
48. Correia, M.; Cunningham, N.; Roberts-Lombard, M. Use of mobile apps when purchasing apparel: A young male adult perspective. *S. Afr. J. Inf. Manag.* **2023**, *25*, a1745. [\[CrossRef\]](#)
49. Hageman, E.; Kumar, V.; Duong, L.; Kumari, A.; McAuliffe, E. Do fast fashion sustainable business strategies influence attitude, awareness and behaviours of female consumers? *Bus. Strategy Environ.* **2023**, *33*, 1081–1098. [\[CrossRef\]](#)
50. Barrera-Verdugo, G.; Villarroel-Villarroel, A. Influence of product selection criteria on clothing purchase and post-purchase behaviours: A gender and generational comparison. *PLoS ONE* **2022**, *17*, e0267783. [\[CrossRef\]](#)
51. Balińska, A.; Jaska, E.; Werenowska, A. The Role of Eco-Apps in Encouraging Pro-Environmental Behavior of Young People Studying in Poland. *Energies* **2021**, *14*, 4946. [\[CrossRef\]](#)
52. Zajackowska, K. 2023. Available online: https://www.youtube.com/watch?v=mpAq_0JUyUE (accessed on 29 June 2024).
53. German, J.D.; Cabacungan, A.D.H. Customer awareness and satisfaction analysis on the use of motorcycle taxi applications in the philippines. In Proceedings of the 2021 IEEE 8th International Conference on Industrial Engineering and Applications, ICIEA, Virtual, 23–26 April 2021; pp. 637–642. [\[CrossRef\]](#)
54. Irwansyah, I.; Triputra, P. User Acceptance of Tourism and Hospitality Mobile Applications in Indonesia. *Soc. Sci.* **2016**, *11*, 5145–5150. [\[CrossRef\]](#)
55. Hill, N.; Brierley, J. *How to Measure Customer Satisfaction*; Routledge: London, UK, 2003.
56. Mazurek-Łopacińska, K. Badania marketingowe. In *Teoria i Praktyka*; PWE Warszawa: Warszawa, Poland, 2005.

57. Chikkabagewadi, S.; Devappa, V.M.; Karjinni, V.V. Evaluation of the Bus Service Quality and a Strategy for Improvement Service: Based on Importance Performance Analysis and Customer Satisfaction Index Level. *J. Pharm. Negat. Results* **2022**, *13*, 5441–5453. [CrossRef]
58. Etikan, I. Comparison of Convenience Sampling and Purposive Sampling. *Am. J. Theor. Appl. Stat.* **2016**, *5*, 1–4. [CrossRef]
59. Johnson, T.P. Snowball Sampling: Introduction. 2014, WileyStatsRef: Statistics. Available online: <https://onlinelibrary.wiley.com/doi.epdf/10.002/978111445112.stat05720> (accessed on 29 June 2024).
60. Gajewska, P. CSI w ocenie satysfakcji konsumentów na przykładzie wybranych sieci handlowych. *ZN WSH Zarządzanie* **2015**, *1*, 101–119. Available online: https://www.humanitas.edu.pl/resources/upload/dokumenty/Wydawnictwo/Zarzadzanie_zeszyt/Zarz%201_2015%20podzielone/ab%20gajewska.pdf (accessed on 29 June 2024).
61. Yadav, N.; Shankar, R.; Singh, S.P. Customer satisfaction—dilemma of comparing multiple scale scores. *Total Qual. Manag. Bus. Excell.* **2023**, *34*, 32–56. [CrossRef]
62. Wolniak, R.; Skotnicka-Zasadzień, B. *Wybrane Metody Badania Satysfakcji Klienta i Oceny Dostawców w Organizacjach*; Wydawnictwo Politechniki Śląskiej: Gliwice, Poland, 2008.
63. Woźniak, J.; Zimon, D. Zastosowanie metody CSI do badania satysfakcji konsumentów na przykładzie wybranej sieci handlowej. *Mod. Manag. Rev.* **2016**, *21*, 219–228. [CrossRef]
64. Skowron, S. Wpływ satysfakcji i lojalności klienta na wyniki finansowe przedsiębiorstw. *Ekon. Probl. Usług* **2010**, *594*, 377–389.
65. Pukas, A. Indeksy satysfakcji klienta—Kluczowe cechy i wykorzystanie w handlu detalicznym. *Mark. I Rynek* **2015**, *8*, 548–556.
66. Przybytniowski, J.W. Metoda CSI w badaniu satysfakcji klienta indywidualnego usług ubezpieczeń majątkowych. *Probl. Jakości* **2019**, *2*, 8–16. [CrossRef]
67. Mulder, J.; de Bruijne, M. Willingness of online respondents to participate in alternative modes of data collection. *Surv. Pract.* **2019**, *12*, 1–11. [CrossRef]
68. Kim, M.; Lee, S.M. Unpacking the Drivers of Dissatisfaction and Satisfaction in a Fitness Mobile Application. *Behav. Sci.* **2023**, *13*, 782. [CrossRef]
69. Lee, H.E.; Cho, J. What Motivates Users to Continue Using Diet and Fitness Apps? Application of the Uses and Gratifications Approach. *Health Commun.* **2017**, *32*, 1445–1453. [CrossRef] [PubMed]
70. Kowalczyk, J. The Evolvement of Online Consumer Behavior: The ROPO and Reverse ROPO Effect in Poland and Germany. *Cent. Eur. Manag. J.* **2018**, *26*, 14–29. [CrossRef]
71. Palomo-Domínguez, I.; Elías-Zambrano, R.; Álvarez-Rodríguez, V. Gen Z's Motivations towards Sustainable Fashion and Eco-Friendly Brand Attributes: The Case of Vinted. *Sustainability* **2023**, *15*, 8753. [CrossRef]
72. Park, S. Effect of Market Mavenship on Fashion Mobile App Characteristics, Satisfaction, and Continued Shopping Intention. *Res. Inst. Hum. Ecol.* **2022**, *26*, 111–122. [CrossRef]
73. Bartosik-Purgat, M. International Contexts of Social Media and e-WoM Communication in the Customer Decision-Making Process. *Cent. Eur. Manag. J.* **2018**, *26*, 16–33. [CrossRef]
74. Okazaki, S.; Hirose, M. Does gender affect media choice in travel information search? On the use of mobile Internet Tourism. *Management* **2009**, *30*, 794–804.
75. Vallespín, M.; Molinillo, S.; Muñoz-Leiva, F. Segmentation and Explanation of Smartphone Use for Travel Planning based on Socio-Demographic and Behavioral Variables. *Ind. Manag. Data Syst.* **2017**, *117*, 605–619. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.