

CLOTHING RETURN BEHAVIOR OF GENERATION Z IN POLAND – CAUSES OF RETURNS AND WAYS TO LIMIT THEM

Introduction

The clothing industry has experienced rapid growth in recent years – influenced in part by the ability to sell clothes online, which is very convenient for customers. Clothing companies both follow and generate demand. Customers like to wear something new every season, so when they see new collections they buy more and more new clothes, including more and more clothes online. To meet this evolving demand, companies adopted fast fashion strategies releasing multiple collections throughout the year, e.g., Zara introduces approximately 20 collections per year, while H&M launches over a dozen [Kryśka, 2023].

In-store shoppers benefit from the opportunity to try on clothes before making a purchase – an experience that is difficult to replicate online. For this reason, one of the main problems for clothing companies is the high return rate associated with online purchases. Clothing and footwear represent the largest percentage of returned items in the e-commerce sector [Bartkowiak, 2022; Walczyński, Kanciak, 2023]. According to statutory regulations in Poland, there is both the possibility to return goods purchased in online shops and to exchange them. This applies to items that are unused, in their original condition and returned or exchanged within 14 days of purchase [Dz.U. 2014 poz. 827, art. 27, 2014], however, the seller can independently

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extend this period in their regulations - for example, stores such as Zalando, IKEA or Decathlon offer 30 or even 100 days to return purchased goods [Szymański, 2017].

Young consumers, including representatives of Generation Z, i.e., born between 1995 and 2010, are responsible for a large proportion of clothing returns. The shopping behavior of this demographic differs significantly to previous generations. Raised in the digital age, these individuals are characterized by a high degree of brand awareness and attachment to purchases, especially those made through online platforms [Kahawandala, Peter, Niwunhella, 2020; Stachowiak-Krzyżan, 2021]. The return of purchased garments among members of Generation Z has become a common phenomenon, generating major challenges for both apparel companies and broader e-commerce industry. The purpose of this article is to analyze the underlying reasons for clothing returns within this demographic and to identify the key factors influencing their decision-making process. The study focuses on aspects such as unsatisfactory product quality, incorrect sizing, discrepancies between product images and actual appearance, unmet customer expectations, and the availability of free returns. Gaining a comprehensive understanding of these factors is crucial for retailers seeking to improve customer satisfaction and reduce the number of returns.

The main research question of this study is to investigate the primary reasons behind clothing returns among Generation Z consumers in Poland, assess the impact of demographic and economic factors on return frequency, and identify effective strategies to mitigate this phenomenon. To address these issues, the study posed the following research questions:

- Does the frequency of using different shopping channels influence the reasons for returning clothing?
- Does gender significantly affect the frequency of returns?
- To what extent does financial status differentiate behaviors related to clothing returns?
- Which aspects of the returns process (e.g., free returns, ease of use, quick refunds) are most valued by Generation Z consumers?

The research was conducted by combining a literature review with a survey targeting young Generation Z consumers. This mixed-methods approach allowed for a comprehensive understanding of their purchasing motivations, return behaviors, and attitudes toward process of returning clothes.

1. Literature review

According to a number of studies found in the literature, the possibility to return products is indicated as one of the most important factors influencing consumers' decisions to shop online [Supryn, Sobczyk, 2016; Duda, Franke, 2023; Baran,

Jankowska, 2017]. In addition, many retailers do not require customer to provide a reason for returning items - which is considered important for buyers [Supryn, Sobczyk, 2016; Walczyński, Kanciak, 2023]. A study on Apparel Shopping Trends conducted in June 2023 by Power Reviews, based on a sample of 25,452 customers from the USA, revealed that 53% of apparel shoppers specifically consider favorable returns and exchange policies before making a purchase decision. Interestingly, the same number of respondents reported having returned a garment within 90 days of purchase [Power Reviews, 2023]. According to the same research, the most common reasons for returning clothing items are: wrong size (39%), discrepancies between product's appearance and customer expectations (28%), buying multiple sizes and returning those that did not fit (13%), the product not matching the description (13%), and receiving damaged or defective product (10%). The results of this research partly coincide with the findings of the 2021 Statista study on global consumers reasons for returning online clothing purchases. According to this research, the reasons for returns were: size mismatch (38%), poor fit (15%), unsatisfactory quality (14%), defective products (13%), change of mind (8%), buying multiple sizes with the intention of returning those that did not fit (6%), buying different styles with the intention of returning those that were unsuitable (5%) [Statista Research Department, 2023].

Similar conclusions were also reached in their research by M. Walczynski and W. Kanciak [2023] and J. Magano et al. [2024] who also identified the wrong size as the most common reason for returns.

For representatives of Generation Z, their buying habits are strongly influenced by digital technology, social media platforms [Stachowiak-Krzyżan, 2021] and recommendations from friends and family members prior to making final purchasing decision [Kahawandala, Peter, Niwunhella, 2020; Parcel, 2020]. Their shopping activities are mainly made online, often via smartphones as the primary device for transactions [Latha, Lakshmi, Pavani, 2023].

Generation Z demonstrates a clear preference for online shopping due to the wide selection of products, access to promotions and convenience [Szydło, Potmalnik, 2022]. However, the lack of opportunity to try on clothes prior to buying leads to increased return rate, which in turn has a negative impact on the environment [Veen, 2023; Frei, Jack, Brown, 2020]. They often order multiple sizes or color variants intending to return those that do not fit or meet expectations [Walczynski, Kanciak, 2023; Lysenko-Ryba K., 2022]. This type of behavior, however, is at odds with the fact that Generation Z is considered to be the most environmentally conscious generation to date [Tran et al., 2022].

Existing literature on the shopping behavior of Generation Z addresses various aspects, both in terms of their purchasing preferences [Šimek, Sadílek, 2024; Chi, Zheng, 2016; Szydło, Potmalnik, 2022] and the shopping channels they choose [Latha, Lakshmi, Pavani, 2023; Stachowiak-Krzyżan, 2021]. Some investigations also touch

upon the topic of returns, focusing on the factors determining return-related behaviors of Generation Z representatives in this area. Studies focus on various aspects of this phenomenon, such as the impact of return policies on purchase decisions [Basak, Swazan, Das, 2022] or the importance of social media reviews [Walczynski, Kanciak, 2023; Paczka, 2020]. It turns out to be particularly important to analyze what factors influence the decision to return purchased clothing [Baran, Jankowska, 2017]. The literature also highlights the economic and environmental consequences of high return rates [Calcabrini et al., 2020; Veen, 2023; Bozzi, Neves, Mont'Alvão, 2022; Frei, Jack, Brown, 2020], making this topic important from both academic and practical perspective.

Despite a growing body of research into the consumer behavior of Generation Z, the issue of their propensity to return clothes is still underexplored. The literature is dominated by an analysis of the general shopping preferences of this group, with limited attention given to the detailed motivations behind return behaviors, their consequences, as well as the identification of solutions to reduce returns and make more conscious purchases. This article seeks to address this gap by providing lessons useful for both theoreticians and practitioners managing online sales in the clothing sector.

2. Research methods

The survey was conducted using the CAWI (Computer Assisted Web Interview) method. The research sample consisted of young people aged 18–25, representatives of Generation Z (students of Polish economic and technical universities).

The primary data used in the article were collected in the second half of 2024 and first half of 2025. A total of 1203 correctly completed questionnaires were obtained, of which a subsample of 910 respondents (455 females and 455 males) were selected to provide a balanced gender distribution (Table 1). The other demographic factors of the sample were relatively homogeneous due to the shared profile of participants – Generation Z university students. Descriptive statistics and tests of independence were used to analyze the data (a significance level of 0.05 was assumed).

The questionnaire consisted of 27 items addressing the frequency and reasoning for returning clothes among representatives of Generation Z. Several questions were designed to verify the proposed hypotheses and to draw insightful conclusions within the scope of the study. The quality of the questionnaire was verified using Cronbach's alpha for four items measured on a Likert scale. The obtained result of 0.872 indicates that the measurement tool and the applied rating scale are very reliable and testify to the internal consistency of the tool.

Table 1. Sample profile

Question		N	%
Gender	female	455	50
	male	455	50
Education	technical secondary	21	2.31
	general secondary	671	73.65
	higher	218	23.96
Place of habitation	village	272	29.89
	town or city with a population up to 50,000	159	17.47
	city with a population between 50,000–150,000	85	9.34
	city with a population between 150,000–500,000	85	9.34
	city with a population over 500,000	309	33.96
Financial status	very good	118	12.97
	good	422	46.37
	neutral	326	35.82
	bad	34	3.74
	very bad	10	1.1

Source: own study.

Additionally, in order to assess the potential impact of common method bias (CMB) resulting from the use of self-report questionnaire measures, Harman's Single Factor Test was conducted. This involved subjecting all measurement variables that may be potentially affected by the common method ($N = 27$) to exploratory factor analysis (EFA) using principal component analysis without rotation. The results revealed that no single factor accounted for the majority of the variance. The first factor extracted explained only 23.79% of the total variance. As this value is well below the 50% threshold, it was concluded that there was no serious problem with common method bias in this study [Jakobsen, Jensen, 2015; Kock, 2020]. In light of the Kaiser-Guttman criterion (Eigenvalue > 1), seven factors were identified within the data structure, which further confirms that the variables are measures of separate constructs and not a reflection of a single general methodological error.

The main objective of the article is to identify the key factors determining the returns of purchased clothes by Generation Z consumers and the factors that could influence ways to reduce them. Based on the literature and the analysis of previous research on the topic [Szydło, Potmalnik, 2022: 21; Koutsou-Wehling, 2024; Nashara, 2024; Magano et al., 2024; Gemius, 2021], the authors identified several relevant determinants, including gender, place of residence, financial status of respondents, and frequency of clothing purchases.

The main research objective of this study is to identify the main factors influencing clothing returns among Generation Z consumers in Poland, the impact of

demographic and economic factors on the frequency of returns, as well as to explore effective ways to reduce this phenomenon. To investigate the outlined objectives, the study posed the following research questions:

- Does the frequency of using different shopping channels influence the reasons for returning clothing?
- Is there a significant influence between gender and the frequency of clothing returns?
- To what extent does financial status differentiate consumer behavior related to clothing returns?
- Which aspects of the return process (e.g., free returns, ease of procedure, speed of refunds) are most important to Generation Z consumers?

On this basis, four research hypotheses were adopted for testing:

H1 – Frequency of using shopping channels:

H0₁: The frequency of using shopping channels does not differentiate the distribution of reasons for clothing returns among Generation Z consumers.

H1₁: The distribution of reasons for clothing returns differs depending on the frequency of using shopping channels among Generation Z consumers.

H2 – Gender:

H0₂: Gender does not affect the frequency of returns among Generation Z consumers.

H1₂: Gender affects the frequency of returns among Generation Z consumers.

H3 – Importance of free returns:

H0₃: Free returns are not perceived as the most important factor in the clothing returns process by Generation Z consumers.

H1₃: Free returns are perceived as the most important factor in the clothing returns process by Generation Z consumers.

H4 – Financial status:

H0₄: Financial status does not affect the frequency of returning purchased clothes among Generation Z consumers.

H1₄: Financial status affects the frequency of returning purchased clothes among Generation Z consumers.

To test the hypotheses, the chi-square test of independence was applied (hypotheses 1, 2 and 4) and the percentage distribution and means of the responses obtained from the survey were used (hypothesis 3).

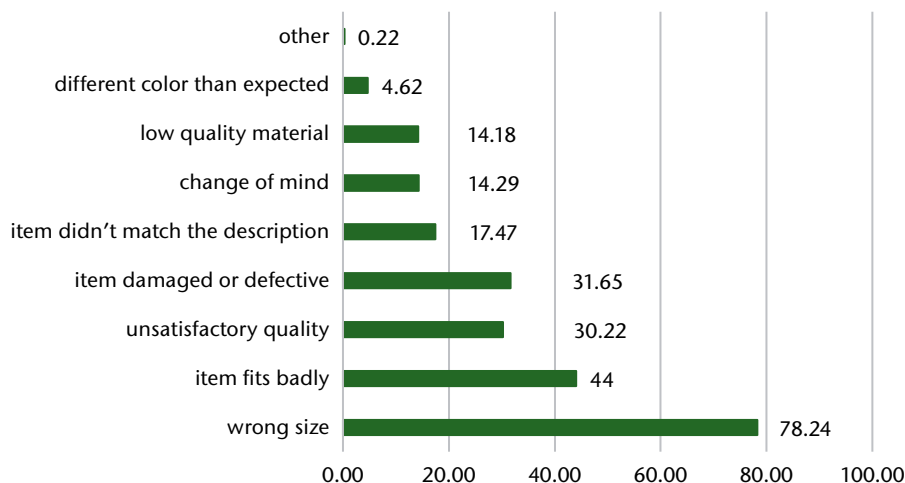
The adopted research approach, combining literature analysis and a survey conducted among young consumers representing Generation Z, enabled to obtain a comprehensive understanding of purchasing motivations and return behaviors within this consumer group.

3. Research results

Consumer returns are significant not only from a business operating perspective, but also in terms of their impact on the environment. Effective managing and reducing them can lead to lower operational costs as well as contribute to minimizing the negative impact on the environment.

The research carried out in this provided insights, mainly from young people (Generation Z), regarding the reasons for returning clothes. To gather this information, respondents were presented with a multiple-choice question in which they were asked to indicate the most common reasons for returning purchased clothing. The detailed summary of their responses is summarized in Figure 1.

Figure 1. Reasons for returning clothing products (%)



Source: own study.

To conduct a more in-depth analysis of the reasons for returning purchased clothing, the study considered the frequency of purchases made through various shopping channels. Specifically, the impact of the frequency of selecting a specific purchase channel on the reasons for returns indicated by the surveyed Generation Z representatives was examined. For this purpose, a chi-square test of independence was applied, the results of which are summarized in Table 2.

A χ^2 independence test was conducted to verify the null hypothesis H01: "The frequency of use of purchase channels does not differentiate the distribution of reasons for returning clothing". Due to the nature of the question (multiple choice), each selected reason for return was treated as a separate observation. The test results,

summarized in Table 2, revealed a statistically significant relationship between the frequency of purchase channel use and the distribution of reasons for returns for each of the analyzed channels. Since the p-value for all three analyses was lower than the accepted significance level ($\alpha=0.05$), the null hypothesis $H0_1$ was rejected in favor of the alternative hypothesis ($H1_1$). In particular, the relationship was strongest for Online Purchases ($\chi^2=53.91$; $p<0.001$) and weakest, though still significant, for Online Purchases with Personal Collection ($\chi^2=17.29$; $p=0.004$).

Table 2. Results of the χ^2 test between frequency of purchase channel use and distribution of clothing return reasons

Purchase Channel	Statistical Test (χ^2)	Degrees of Freedom (df)	p-value	Conclusion on $H0_1$
In-store purchase (brick-and-mortar purchase)	30.48	18	<0.001	Rejection
Online purchase	53.91	18	<0.001	Rejection
Online purchase with in-store pickup	17.29	18	0.004	Rejection

Source: own study.

Table 3. Impact of gender on the frequency of clothing returns

How often do you make returns?	Female $n=455$		Male $n=455$	
	n	%	n	%
Never	44	9.67	65	14.29
Rarely	187	31.10	234	51.43
Sometimes	167	36.70	130	28.57
Often	51	11.21	24	5.27
Very often	6	1.32	2	0.44
Statistical significance	$\chi^2=25.62233$ $df=4$ $p=.000037$			

Source: own study.

Another tested hypothesis, $H2$, assumed that gender had an impact on the frequency of returns. To verify this, a chi-square (χ^2) independence test was used, which showed a statistically significant relationship between the variables under study ($p < 0.05$). Based on the test results, hypothesis $H0_2$ – stating that gender does not differentiate the frequency of purchased clothing returns – should be rejected and the alternative hypothesis $H1_2$ accepted. The outcomes of the χ^2 test confirmed the presence of statistically significant associations. The detailed results of the analysis are presented in Table 3.

Analysis of the survey results indicates that clothing returns are more often initiated by female respondents.

Subsequently, Generation Z participants were asked to evaluate a series of statements related to the clothing return process (Table 4). The rating scale included

a 5-point Likert scale (1 representing – not at all important, and 5 indicating – very important). This allows an average to be calculated for each factor examined.

Table 4. Assessment of factors influencing the garment return process

Evaluated factor	1	2	3	4	5	Mean	Std. Dev
Fast refunds	20	72	136	203	370	4.04	1.10
Free returns	12	15	63	158	553	4.53	0.84
Simple return procedure	6	20	80	228	467	4.41	0.83
Availability of return points	14	47	138	277	325	4.06	0.98
Possibility to exchange for another product	156	175	229	139	102	2.82	1.28

Source: own study.

Based on the results, the most important factor (reflected by the highest mean score of 4.53) was found to be the absence of return costs. In second place, with an average score of 4.41, was the simple return procedure. The least important factor, according to respondents, was the possibility to exchange for another product (mean score of 2.82). The findings obtained support the acceptance of the alternative hypothesis (H_{13}) assuming that the lack of return fees is the most important aspect of the return procedure for Generation Z. Consistent with the hypothesis, this factor proved to be the most important for the surveyed group.

The final hypothesis tested (H_4) examined the influence of financial status on the frequency of returning purchased clothing. In order to verify it, a χ^2 independence test was performed (Table 5). It showed a statistically significant relationship between the variables under study ($p < 0.05$), leading to the rejection of the null hypothesis (H_{04}) and acceptance of the alternative hypothesis (H_{14}). However, it is important to note that some subgroups within the sample were relatively small, which may increase the risk of a Type I error (false positive result).

Table 5. Impact of financial status on the frequency of clothing returns

Frequency of returns of purchased clothing	Financial status									
	Very bad (n=10)		Bad (n=34)		Neutral (n=326)		Good (n=422)		Very good (n=118)	
	n	%	n	%	n	%	n	%	n	%
Never	5	50	5	14.71	38	11.66	48	11.37	13	11.02
Sometimes	2	20	11	32.35	95	29.14	143	33.89	46	38.98
Rarely	3	30	15	44.12	166	50.92	189	44.79	48	40.68
Often	0	0	3	8.82	21	6.44	40	9.48	11	9.32
Very often	0	0	0	0	6	1.84	2	0.47	0	0
Statistical significance	$\chi^2=45.98232$ df=16 p=.034									

Source: own study.

Nevertheless, the correlations analyzed are discernible and worth highlighting in the study. However, to confirm their statistical significance with greater confidence, it is advisable to repeat the study on a larger and more diverse sample.

4. Discussion

The conducted research provides valuable insights into the clothing return behavior of Generation Z consumers in Poland, confirming and extending existing international findings in this area. The results obtained allow for a multi-dimensional interpretation of both behavioral and contextual determinants of the phenomenon, situating them within the framework of contemporary theories of consumer behavior, digital commerce, and sustainability.

The research confirmed that the main reason for clothing returns among Generation Z in Poland is the selection of the wrong size. This was followed by discrepancies between the product presentation in the online store and its actual appearance, as well as the importance of simple and free return procedures. These results are consistent with the findings of previous international studies, which also identified size mismatch and failure to meet consumer expectations as the dominant reasons for returns [Statista Research Department, 2023; Magano et al., 2024; Walczyński, Kanciak, 2023]. In this context, the present study confirms the global trend and proves its relevance on the Polish market, especially among young consumers.

At the same time, the results revealed statistically significant associations between demographic variables, such as gender and financial status, and the frequency of clothing returns. The observed correlation between gender and return frequency confirms previous findings that women are more likely to return clothing than men [Basak, Swazan, Das, 2022; Baran, Jankowska, 2017]. This tendency may be attributed to greater fashion engagement, higher aesthetic expectations, or more frequent exploratory shopping. The significance of the financial status variable suggests that higher-income consumers are less sensitive to the transaction costs associated with returns, which promotes more impulsive purchases. However, given the relatively homogeneous study sample (comprising primarily students), this conclusion should be treated with caution.

Particularly noteworthy is the finding that the absence of return-related costs constitutes the most influential factor for young consumers in the return process. This suggests that return policies not only shape post-purchase behavior, but may also indirectly encourage over-ordering practices (e.g., buying several sizes or variants with the intention of returning some of them), as previous studies have also highlighted [Frei, Jack, Brown, 2020; Lysenko-Ryba, 2022].

A major challenge is to balance customer satisfaction with the economic and environmental costs generated by product returns. Research findings indicate that Generation Z, often described as the most environmentally conscious demographic [Tran et al., 2022], unknowingly contributes to increasing the burden on the environment by returning purchased products more frequently.

This supports the existence of a phenomenon referred to as “return bias”. Specifically, the presence of a green gap is evident, highlighting a disconnect between declared pro-environmental attitudes and actual consumer decisions. This paradox underscores a critical area for further research, with implications for business strategy, consumer education and sustainability-focused policy development.

In summary, this study contributes to the existing literature by confirming established return behavior patterns and adapting them to the Polish context, as well as pointing to specific implications for business practice. The results of a survey conducted among representatives of Generation Z revealed the key reasons for clothing returns, the most frequently mentioned of which were problems with size selection, discrepancies between the actual appearance of the product and its presentation in the online store, and the importance of simple and cost-free return procedures. These findings provide a starting point for exploring ways to reduce return rates – the solutions implemented by companies should directly address the identified causes. Initiatives such as improving the presentation of products online, using modern virtual fitting room technologies, or simplifying the exchange policy and adapting it to the expectations of young consumers can contribute to reducing the number of returned products. The practices and tools presented below can therefore be considered as potential solutions to the problems identified in the study.

5. Ways of reducing returns

Over the years, the return reduction methods and practices adopted by companies have evolved and adapted to the dynamic environment. Today, retailers implement various strategies to reduce the number of returns from retail customers.

When shopping today, the modern customer increasingly values convenience and comfort, as well as the time spent shopping. This is particularly true in the case of clothing. In both physical and online retail shops, the ability to try on clothes before purchase plays a crucial role in decision-making process. In brick-and-mortar stores, this often involves waiting in a fitting room queue, trying on different sizes, styles or colors of the selected garments. When shopping online, however, customers lacking this opportunity frequently order several versions of a product with the intention of returning the ones that do not meet their expectations.

One of the simplest methods to reduce returns in the clothing industry is to improve the visualization of products on the website as to increase the number of pictures and provide detailed descriptions of the materials and accessories used on the garment [such as buttons, zips, seams, etc.] [Cullinane, Cullinane, 2021].

In recent years, more advanced solutions leveraging artificial intelligence (AI) and using augmented (AR) and virtual reality (VR) are also being introduced in this area. These technologies aim to make the shopping process easier and faster for customers. When shopping online, technologies based on artificial intelligence and augmented reality enable customers to have a more realistic and interactive shopping experience. The purchases made are thus more thoughtful [Syed et al., 2021]. Augmented reality enables digital content to be superimposed on the real environment, allowing customers to try on virtual clothes. Virtual reality, on the other hand, creates fully digital environments in which users can explore products in a manner similar to a physical shop. One notable example is the use of smart mirrors, giving users the opportunity to try on clothes in different colors and sizes, even those not available in shops. Customers can also receive personalized style recommendations [Wang, Marsden, Briony, 2023]. Smart Fashion Mirrors (SFM) technology further enhances this experience by allowing virtual try-ons without physical interaction. These mirrors also allow profiling of customers based on their previous purchases and suggest products based on their preferences [Alanazi, Alenazi, 2023]. An interesting solution in this regard has also been implemented by UNIQLO stores, where it is possible to share the view of a selected style with friends to get their opinion [Szczygłowska, 2019].

The virtual fitting room, developed by a team of Adobe researchers at the Indian Institute of Technology and Stanford University, enables to show all the details of a given product, e.g., creases or folds in the material, and allows it to fit properly to the virtual body on a 3D avatar model generated by the customer. The model is freely rotatable and equipped with heat-mapping functionality, so that the alignment of the material can be assessed and its texture checked. It also makes it possible to determine where the garment is too tight and where it is too loose [Głowienka, Jarosz, Stoma, 2021].

Also in the footwear industry, companies such as Nike and Gucci employ augmented reality technologies to allow customers to virtually try on shoes [Głowienka, Jarosz, Stoma, 2021]. A similar solution in the Polish market is offered by the startup WEARFITS, which develops try-on technologies for both footwear and clothing [Gola, 2021].

Another noteworthy innovative solution in the footwear industry is the e-size.me project, introduced by eobuwie.pl. This initiative involves measuring/scanning customers' feet and storing the data within the system. Based on these measurements, during online shopping the application selects the most suitable footwear for the customer, taking into account parameters such as foot length and width, instep height

and even toe shape and length [Szozda, Świerczek, 2021]. The app also allows the customer to select the right size of footwear according to its manufacturer.

The CCC brand, on the other hand, decided to introduce a hero – FUZZY – who is also a virtual customer assistant while shopping online. In addition, the company has scanned its product range, enabling customers to view items in AR form.

While the technologies discussed offer significant benefits, there are challenges to implementing them in e-commerce, including technology limitations, data protection and storage concerns, as well as the high cost of creating content and integrating it with existing shopping platforms.

As the technology evolves and implementation costs decrease, an increasing number of companies will be able to adopt these solutions to attract new customers, gain a competitive advantage, increase sales of their products and, most importantly, reduce return rates [Al Khaldy et al., 2023].

In the context of future research, it would be advisable to extend the analysis to include an assessment of the proposed solutions for reducing product returns from the consumers' perspective. In particular, it would be worthwhile to verify the extent to which Generation Z representatives would be interested in adopting particular tools and which of these they consider potentially most effective in reducing the number of returns. Such results would not only allow for empirical validation of the solutions indicated in the literature, but also help to determine the directions with the greatest implementation potential, offering important guidance for both business practice and further scientific research in this area.

Conclusions

Product returns represent a major challenge for both businesses and the economy as a whole. Reducing return rates yields numerous benefits, both economic, logistic, social and environmental.

The aim of this article was to identify the key determinants of consumer returns of purchased clothing and factors that could influence ways to reduce them. It highlighted consumer behavior in terms of reasons, methods and frequency of returning apparel. The survey provided valuable data on the experiences and expectations of consumers – representatives of Generation Z – enabling the identification of primary causes of returns, such as wrong size or mismatched products. Based on the feedback gathered, a number of solutions have been proposed to help reduce the number of returns, including the introduction of modern technologies aimed at tailoring garments to individual customer needs.

The literature addresses a number of issues in the area of consumer returns. A growing number of publications refer to the role and importance of returns in the

management of corporate strategy, the operating costs incurred and the frequency of consumer returns. However, there is a lack of studies concerning the causes of returns, mainly in fashion retail, and research exploring purchasing preferences and reasons for returns among Generation Z.

On the basis of the research conducted, the following key findings were identified:

- The main cause of returns among Generation Z in Poland is the wrong size and poor fit of purchased clothing, with the clothing purchasing channel significantly influencing the return reasons.
- One of the most important factors influencing the returns process is the lack of return fees.
- Economic and demographic variables, such as gender and financial status, were found to affect the frequency of clothing returns.
- Technological developments make it possible to introduce new solutions to meet the expectations of the modern customer and thus reduce consumer returns.

All the research hypotheses posed in the article were positively verified, yielding several noteworthy conclusions. Although one of them may raise some doubts and generate the need for a deeper analysis or repetition of the research, given the small sample sizes tested, which could lead to false positive result in the chi-square test of independence. The results of the study confirmed the authors' assumptions regarding the similarities of the examined social group in the context of fashion retails returns to global trends. They have also partially filled the research gap in terms of identifying the reasons and methods of clothing returns by consumers representing Generation Z in Poland, as well as contributing updated insights to the subject.

The research conducted for this article, along with the solutions described for reducing returns in the apparel industry, can contribute to lowering the operating costs of companies associated with handling returns and to increasing customer satisfaction with their purchases. Moreover, these measures can support increasing public awareness of the environmental impact of returns. The solutions presented can make a real difference to society's purchasing behavior in the near future.

However, the research conducted has some limitations that are worth addressing in the future. One key constraint is the demographic structure of the sample, which may not fully reflect the diversity of the community studied. Employing a more representative sample – including participants from a variety of social groups, not only students, but also active professionals – could provide a more complete picture of the factors influencing returns in the clothing industry. In addition, it is worth considering to enhance the sample size, which would improve the reliability and generality of the results.

Further research would also be advisable to test the effectiveness of the improvements proposed in the article to reduce return rates. Understanding Generation Z's opinions on the usefulness and interest in the solutions described could allow for an

assessment of their impact on returns and customer satisfaction. This would provide valuable information on which strategies are most effective in addressing the problem of returns and would help to refine best practice for the fashion industry.

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CLOTHING RETURN BEHAVIOR OF GENERATION Z IN POLAND—CAUSES OF RETURNS AND WAYS TO LIMIT THEM

Abstract

The main objective of the article is to identify the most important determinants influencing clothing returns among Generation Z consumers, and the potential strategies for reducing return rates. The article carries out a statistical analysis of data collected through a CAWI survey on consumer returns of clothes targeting this demographic. In addition, a literature review of existing research on the subject has been conducted to contextualize the findings. The article combines theoretical insights with empirical research based on the analysis of the authors' own data analysis. The conducted research and the described solutions to reduce returns in the clothing industry may contribute to lowering the operating costs of enterprises and enhancing overall customer satisfaction.

KEYWORDS: CLOTHES, SMART FASHION MIRRORS, AUGMENTED REALITY, VIRTUAL REALITY, FAST FASHION.

JEL CLASSIFICATION CODES: M31, D12, L81, O33, Q56.

KONSUMENCKIE ZWROTY ODZIEŻY POKOLENIA Z W POLSCE: PRZYCZYNY I SPOSOBY ICH OGRANICZANIA

Streszczenie

Głównym celem artykułu jest identyfikacja najważniejszych determinantów zwrotów konsumenckich zakupionej odzieży oraz czynników, które mogą mieć wpływ na sposoby ich ograniczenia wśród przedstawicieli pokolenia Z. W artykule przeprowadzono analizę statystyczną wyników badania metodą CAWI dotyczącego zwrotów konsumenckich odzieży w badanej grupie. Ponadto przeprowadzono przegląd literatury dotychczasowych badań na analizowany temat. Artykuł ma charakter teoretyczno-badawczy i opiera się na analizie własnych badań autorów. Przeprowadzone badania oraz opisane rozwiązania, mające na celu ograniczenie zwrotów w branży odzieżowej, mogą przyczynić się do obniżenia kosztów operacyjnych przedsiębiorstw oraz zwiększenia satysfakcji klientów z zakupów.

SŁOWA KLUCZOWE: ODZIEŻ, INTELIGENTNE LUSTRA, ROZSZERZONA RZECZYWISTOŚĆ, WIRTUALNA RZECZYWISTOŚĆ, SZYBKA MODA

KODY KLASYFIKACJI JEL: M31, D12, L81, O33, Q56.