



Article

Digital Innovations in E-Commerce: Augmented Reality Applications in Online Fashion Retail—A Qualitative Study among Gen Z Consumers

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Abstract: Digital innovations have significantly transformed the marketing landscape, with visual technology solutions having become mainstream in the fashion industry approximately a decade ago. Digital technology offers a range of benefits to online fashion retailers, enhancing their online shopping platforms with augmented reality features that allow customers to “try on” products digitally before making a purchase. This research aims to explore the key factors influencing the use of augmented reality applications and e-commerce sites for purchasing apparel. A qualitative study was conducted to examine the visual experience and usage of augmented reality applications among young customers. The findings highlight the most relevant factors in the online fashion purchasing process, the visual experience, and the potential future use of augmented reality applications in fashion product purchasing. These insights are crucial for developing effective marketing strategies and communication messages.

Keywords: e-commerce; augmented reality applications; visual experience; fashion consumption; generation Z consumers



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1. Introduction

E-commerce has been transformed significantly from its inception in the late 20th century, driven by advancements in internet technology, secure payment systems, and increasing consumer adoption. Early e-commerce focused on basic online catalogs and transactions, but technological innovations such as mobile commerce and social media integration have enhanced consumer engagement and expanded market reach. Government policies and digital infrastructure development, exemplified by Singapore’s strategic initiatives, have further accelerated e-commerce growth. Key factors influencing this evolution include technological infrastructure, market dynamics, and regulatory environments, with PESTLE analyses providing insights into regional development strategies. Looking forward, advancements in artificial intelligence (AI), augmented reality (AR), and blockchain promise to enhance security and streamline operations, solidifying e-commerce’s role in global economic expansion [1–3]. Forbes CEO Sinelnikov highlighted in his article “The Future of E-Commerce: Trends 2024” that in e-commerce augmented reality shopping experiences, blockchain for supply chain transparency, customized loyalty programs, eco-friendly e-commerce, stronger security and privacy measures, more personalized subscription models are leading trends in 2024. As he mentions, “AR enables customers to have immersive shopping experiences from the comfort of their homes. It allows them to visualize products in a real-world context, making informed decisions before making a purchase. We have the frameworks to apply AR technology to e-commerce on a broader scale than we currently do. TikTok and Instagram filters alone prove that we can do this

easily, and relatively inexpensively. What we need is for companies that can most benefit from this tech—salons, clothing retailers and more furniture and home improvement retailers—to provide this interactive and engaging shopping experience” [4] (p. 1).

Digital innovations, including artificial intelligence, automated solutions, augmented reality, and the dynamic influences of Social Media Networks (SMNs), offer new directions for marketers and will shape the near future of the industry. An increasing number of retailers are investing in immersive technologies to meet the demands of customers seeking more than the average shopping experience. Among these innovations, augmented reality has emerged as a new frontier in retail.

State-of-the-art visual technology solutions, which have become mainstream in the fashion industry, are at the core of the digital communication strategies of brands and online retailers. Augmented reality is currently one of the most dynamically developing technologies in fashion retail, alongside artificial intelligence-based solutions. Unlike virtual reality (VR), which completely immerses users in a synthetic environment, AR superimposes computer-generated data onto the real world, enhancing the users’ perception of reality [5–8].

The dynamics of the fashion industry have changed dramatically in recent decades. According to statistics, fashion is the largest B2C e-commerce market segment, with a global size estimated at USD 768.7 billion in 2023. The market is expected to grow at a rate of 9.45% per year, reaching USD 1103.3 billion by the end of 2027 [9] (p. 1). The Forrester Analytics report covers the e-commerce fashion segment, which includes clothing, shoes, bags, and accessories sold via digital channels. Notable online shops for fashion products include macys.com, next.co.uk, and zalando.de, as well as marketplaces like amazon.com. The report excludes offline sales, customer-to-customer sales (e.g., eBay), and business-to-business transactions [10]. It was also predicted that e-commerce would account for 36% of global fashion retail sales by 2022 [11]. The study provided a five-year insight into the online and offline fashion retail market, highlighting a rise in buyers, brands, retailers, and global market dynamics across 32 countries.

Among the primary segments of fashion, apparel makes up the majority of what consumers are purchasing online, but accessories and footwear still account for significant amounts of the online fashion market’s revenue worldwide [12]. Approximately 21 percent of global fashion retail sales are conducted through e-commerce transactions [13] (p. 1). Millennials represent the largest market for fashion brands. This demographic is characterized by extensive digital search habits and the use of digital communication channels. For clothing retailers, capitalizing on technology and social media is essential in engaging millennial customers [14]. There is a shift in attitudes towards luxury brands among young customers, with predictions that fashion product images and comments will increasingly appear on various media channels [15]. Gen Z-ers are, however, increasingly price-conscious, which may be a growth barrier to the luxury fashion segments [16]. Furthermore, sustainability and circularity are becoming more important, highlighting the relationship between fashion and style, sustainability, and attitudes towards the Circular Fashion Economy and its impact on changes in shopping behavior [17].

Young shoppers typically go online during the discovery and consideration phases of their shopping journey but they prefer an offline shopping experience for final purchases. This hybrid purchasing behavior, particularly in fashion e-commerce, continues to grow rapidly. Over the past two years, “best” searches in the apparel category have increased by more than 15%, with women’s clothing searches growing by over 20%. The manner in which fashion enthusiasts search for clothing online depends on their specific needs. According to Google, direct searches often involve detailed keywords, improving the likelihood of finding relevant images. Notably, 45% of the dress searches reference events such as weddings, formal events, graduations, proms, parties, and summer activities. While fashion is a globalized industry, regional differences are evident. In addition, 17% of the searches include gender-specific terms like “women’s shorts”, 13% reference color, and 8% concern size and fit [18].

Technological advancements, user-friendly interfaces, positive consumer attitudes, and sustainability concerns drive the use of AR in online fashion retail. AR enhances customer experience through immersive features like virtual try-ons, improving product visualization and engagement. Google's Shopping Graph continuously updates product information, enabling personalized shopping experiences. Google's personalized shopping tips help consumers find deals, new arrivals, and trending products tailored to their preferences, leveraging AR to enhance the shopping journey [19].

The Spring Try Guide from Google emphasizes AR features and filters to enhance shopping. The "get it fast" filter helps shoppers find products available for quick shipping. Additionally, AR beauty tools allow users to virtually try on makeup products, enhancing the online shopping experience by providing a realistic preview of how products will look. These features aim to make shopping more efficient and personalized [20].

The fashion industry is known for its adoption of new trends in communication, advertising, e-commerce, and technological innovations. Fashion brands have recognized the impact of virtual reality and augmented reality on showcasing and marketing products, engaging consumers, and increasing satisfaction levels. Implementing artificial intelligence solutions, VR, and AR in both physical stores and e-commerce platforms enhances the shopping experience and strengthens brand affinity. The key questions now are how consumers use these new platforms and applications, and how these technologies affect their buying behavior and satisfaction levels [21]. Augmented reality (AR) and virtual reality (VR) markets have seen significant growth and consolidation as major tech companies acquire specialized firms to strengthen their market positions. Advances in technology and the widespread deployment of 5G networks are key drivers for this growth, providing enhanced user experiences and broader applications. These factors indicate robust future expansion for AR and VR industries. [22] The AR and VR market is projected to generate revenue of USD 40.4 billion in 2024 [23]. Google's emphasis on AR also raises questions about its impact on search engine optimization (SEO) [24]. Additionally, Apple's ARKit has brought high-quality AR experiences to iOS devices, serving as a foundation for various fashion brand applications. A plethora of applications have been developed, with their functionality ranging from trying-on clothes and sneakers to makeup, allowing users to "wear" a garment, shoes, and accessories, among other things, by using their smartphone. From a consumer perspective, exploring a feature enables users to personalize the virtual space, providing enhanced flexibility in presenting fashion collections [25]. "In 2023, visual search users were the biggest contributor towards the total number of mobile augmented reality (AR) users worldwide, with 912 million active users through this method. Other notable mobile AR platforms include Meta AR, Snap Lenses, and TikTok AR" [26] (p. 1).

In the following section, we present a glossary of the main technical terms mentioned in the text [27]:

Artificial intelligence (AI): The simulation of human intelligence processes by machines, especially computer systems, which include learning, reasoning, and self-correction.

Augmented reality (AR): A technology that overlays digital content, such as images or videos, onto the real world through devices like smartphones or AR glasses.

Blockchain: A decentralized digital ledger that records transactions across many computers so that the record cannot be altered retroactively without the alteration of all the subsequent blocks and the consensus of the network.

Digital avatars: Virtual representations of users that can be customized and used in digital spaces, such as virtual try-on applications.

Gen Z (generation Z): The demographic cohort born roughly between 1997 and 2012, known for being tech-savvy and valuing personalized, interactive experiences.

Immersive digital spaces: Digital environments that provide a fully engaging experience, often used in the context of the Metaverse.

Mobile commerce: The buying and selling of goods and services through wireless handheld devices such as smartphones and tablets.

Virtual reality (VR): A technology that creates a fully immersive digital environment, often experienced through VR headsets.

Virtual try-ons: An AR feature that allows consumers to see how clothing and accessories would look on them without physically trying them on.

1.1. Visual Technology Solutions

Fashion consumers are experiencing an integrated path to purchase, where physical shops and digital touchpoints reinforce each other. In a multichannel strategy, physical stores can play various roles, from selling to picking up products and building a brand image. Online retail and communication reach a broader audience and have a long-term impact through a digital footprint. The acceptance of digital innovations and immersive e-commerce experiences contributes to brand building. For brands aiming to stand out, augmented reality applications and other try-before-you-buy experiences are becoming essential digital marketing tools.

AR technology enhances the real world with virtual elements. Marketers can deploy AR in various ways for different purposes, resulting in unique forms of AR technology [24] (p. 1):

1. Marker-based AR (Image Recognition or Recognition-based AR) that provides more information about an object by recognizing it.
2. Marker-less AR (location-based AR) that is widely implemented in smartphones, offering location detection features.
3. Projection AR that projects light onto a surface, creating an interactive experience.
4. Superimposition-based AR that replaces the entire or partial view of an object with an augmented view.
5. Digital Packaging AR that allows users to interact with a physical object, revealing a deeper experience.
6. Information Overlay and Virtual Objects that use virtual objects to create reactive images based on the physical surroundings.

Voutik [28] investigates the factors influencing the use of AR in various business segments, emphasizing its impact on visual experiences and consumer behavior. Key insights include the adoption of AR for online shopping, indoor navigation, enterprise solutions, remote assistance, and automotive applications. AR technology improves user engagement, aids in navigation, and provides remote assistance, contributing to enhanced customer experiences and business efficiency.

1.2. Visual Experience

Research on technological innovations in the fashion industry, such as AR, is limited, particularly regarding the perceived usefulness and ease of use from a consumer perspective [29]. The try-before-you-buy experience and product comparability are crucial for young customers, especially in fashion, where multisensory experiences play a key role in product evaluation and decision making [30,31].

Technological developments in marketing aim to increase the time shoppers spend on marketplace sites, discovering and researching products, thereby providing retailers with insights into buyers' purchase journeys [32,33]. Fashion products are projected to account for nearly half of all the online purchases in the coming years, with online purchasing rates predicted to grow [34]. Millennial consumers seek integrated experiences across channels [35,36], and AR offers a virtual environment where customers can experience a sense of physical presence [37], making it an effective tool for providing consistent shopping experiences across online and offline channels [38].

Leading global brands are actively investing in AR shopping applications, expecting to maximize shopping experiences. The impact of the new online environment as a shopping channel will be significant in the coming years. AR is driving sales and engagement for fashion and beauty brands investing in this technology through social media platforms

or their websites. Viewing 3D models in AR on e-commerce sites can increase conversion rates by up to 250% [39].

Augmented reality (AR) in fashion retail enhances customer engagement and drives sales by offering immersive, virtual try-on experiences. Examples include H&M's virtual clothing competition, Burberry's AR integration with Google for product visualization, Zalando's Snapchat-based virtual dressing, Lily's smart mirrors in Shanghai, Fendi's virtual dressing rooms, and Adidas's AR footwear try-ons. These initiatives boost brand loyalty, reduce return rates, and increase sales by providing personalized, interactive shopping experiences that allow customers to visualize products in their real environment [40]. Although AR skills are still developing, tech platforms are investing in tools to make them more accessible. Several studies have examined consumer responses to visual assets, finding the brand-related impact of AR to be unclear. The existing research focuses on consumers' motivations for and reactions to using AR applications [41]. Fashion e-commerce is expanding year over year, offering significant advantages over traditional shopping, such as time-saving, item diversity, and competitive pricing. However, it lacks the physical apprehension of offline shopping, a major disadvantage highlighted by research studying the effects of online VR on consumers' exploratory behavior and purchase intentions [42].

The benefits of using experiential AR retail applications include a positive impact on purchase intention, mediated by a positive affective response. Research has distinguished between functional and hedonic shopping motivations, which moderate the relationship between AR augmentation and positive affective responses [43].

The global AR market is predicted to grow rapidly in the coming years, transforming e-commerce and education through rapidly evolving applications. High smartphone usage penetration and advancements in 3D visualization, hardware, and software development are driving this change, with technological giants participating in the AR market.

Augmented reality is transforming the fashion retail landscape, particularly among Gen Z consumers. This study explores how AR enhances shopping experiences, aligns with sustainability values, and fosters social interaction in e-commerce. Through virtual try-ons, digital avatars, and immersive digital spaces, AR meets the tech-savvy preferences of Gen Z, driving engagement and loyalty in the fashion industry.

Augmented reality is a technology that overlays digital information, such as images, videos, and sounds, onto the real world through devices like smartphones, tablets, or AR glasses. This study investigates the impact of AR on the shopping behavior of generation Z (Gen Z) in the fashion online retail sector.

We conducted a qualitative study involving in-depth interviews with Gen Z consumers to understand their experiences and perceptions of AR in online fashion retail. The participants were asked about their use of AR for virtual try-ons, their attitudes towards AR technologies, and the overall impact on their shopping decisions.

Based on an extensive review of the current literature, the authors have meticulously formulated the following research questions to guide their investigation into the dynamic interplay between technological advancements and consumer behavior in the online fashion retail sector:

RQ1: What are the specific factors that influence the use of AR applications in online fashion retail?

RQ2: How do visual technology solutions like AR enhance the customer experience?

RQ3: What are the stages of the online fashion purchasing process where AR applications are most utilized?

RQ4: What are the perceived benefits of using AR applications for online fashion shopping according to GenZ consumers?

2. Methodology

All the participants in this study were young consumers aged between 20 and 30, who were relatively familiar with online purchasing. A total of 51 participants, recruited through the snowball sampling method from three universities in Budapest, Hungary, took

part in the study. The gender ratio was nearly equal, with 24 male participants (47%) and 27 female participants (53%).

Before the interviews, the participants completed short pre-experiment questionnaires about their fashion consumption habits and prior experiences with augmented reality. For the purposes of this study, fashion consumers were defined as individuals who had purchased at least one fashion item online in the previous 12 months. The study employed interviews and observations as qualitative evaluation methods, and the qualitative text data were analyzed using content analysis. The interview text was coded into code categories using the inductive thematic analysis, and the codes were further categorized into code categories to summarize the data. For ensuring the validity and reliability of the findings, conventional content analysis was applied.

The semi-structured interviews comprised three sections. First, the participants reflected on their offline and online clothing purchase habits. Second, they simulated a purchase process. Third, they summarized their experience using AR applications. During the simulation, the participants used their own devices to reveal more issues, as they were interacting with real devices in a simulated purchasing situation. The qualitative data provided insights into the participants' purchasing paths, the problems they encountered, and their responses in the questionnaires, post-test interviews, and debriefing sessions.

3. Results and Discussion

The study examined the influence of the presentation of fashion garments on young consumers' online purchasing behavior, focusing on different experiences related to viewing fashion online. The primary areas identified were the decision-making process, the usage of different online channels, and fashion applications. These were examined across different consumer segments: high, average, and low involvement in fashion.

3.1. Consumption Habits and Online Purchases

A major challenge was categorizing involvement and understanding the role of involvement factors such as product expertise, knowledge of the latest fashion trends, and the frequency of purchasing new items. The study focused on contextual and motivational factors influencing online purchasing and the use of fashion brands or retail applications. The interviewees were asked to recall a story or situation in which they purchased clothes. All the participants reported that they decided independently where and what pieces of clothing to purchase. The young adults in the sample all had a monthly budget partially allocated for clothing. More than half of them received spending money or had a salary. The primary motivations for purchase were changes in fashion and the need for "something new to refresh the wardrobe". The participants often viewed this as a form of self-reflection, leading to regular wardrobe updates. They mostly purchased accessories and T-shirts impulsively. Only around five percent indicated the necessity of a new item, implying a functional purchase.

The first section of the interview guide aimed to understand why consumers are motivated to buy fashion products online. The most frequently mentioned factors were the "huge array of clothes, shoes, and accessories", the availability of brands, and the accessibility of brands in the absence of physical shops nearby. Saving time and finding the right size and color were also highly important factors. Online searches were closely linked to a limited number of brands, multi-brand online retailers, and some applications. Less than ten percent of the respondents used applications daily, while roughly twenty percent used fashion applications 2–3 times weekly, and seventy percent used them weekly or less frequently before the interview. The most typical offline purchasing channels were shopping malls, while the online channels were primarily global brand eCommerce sites (e.g., H&M or Zara) and shoe retailers (e.g., ecipo, Amazon, or About You). Only six participants regularly searched for designer brand products. Second-hand and charity shops were not mentioned as purchasing channels. The interviewees were asked to comment on past experiences while shopping online. In general, the respondents were satisfied

or highly satisfied with the purchase, except for some cases of late delivery. Only three mentions were made pertaining to quality issues. The most frequent criteria for online fashion shopping included easy size changes and flexibility in returns if the quality did not meet expectations.

3.2. The Customer Journey Model of Online Fashion Purchase

The most important motivation for searching online was fashion awareness, followed by changing fashion trends. During the simulated online purchase process, the respondents had to find a garment for themselves and another as a gift using their own or a provided notebook. The average search time was 8 min, with significant differences: the male respondents took more than 12 min on average. Gender differences were observed in search mechanisms and channels: the male respondents frequently used Google search (more than 90%) compared to the female respondents (around 60%). The male respondents primarily conducted manual Google searches, while the female respondents used significantly more channels (2–3 versus 8–9 websites and applications). The young women often used search by pictures. A highly fashion-sensitive group reported searching daily on Pinterest and Instagram for photos or screenshots for inspiration.

All the respondents searched for pictures and videos manually, not using voice search. Table 1 summarizes the channels used by the respondents at different stages of the online fashion purchasing process, highlighting the frequency and type of each channel used during the awareness, research, selection, delivery, and post-purchase evaluation stages.

Table 1. Overview of the channels identified in the decision-making process (frequency in percent).

Stage	Over 75%	25% to 75%	Under 25%
Awareness	Facebook Messenger, Instagram Stories, Instagram, Pinterest, YouTube, Instagram Influencers, and Tagged Brands	Brand Instagram, Facebook, and Displays	Blogs, Retailer’s Websites, and Brand’s Website Applications
Research	Google Manually, Google by Picture, Comments, and Ratings	n.data	n.data
Selection	Style, Price/Affordability, Color, Fabric, Rating, Comments, and Shipping Price	Items Fit Together	Designer, Origin, and Ethical Brand
Delivery	Delivery to Home or Workplace	n.data	In Shop
Follow Up/Evaluation	Coupons, Newsletters, Brand Social Media Site, and Messenger	n.data	n.data

Source: own research

The results indicate a significant relationship between involvement in fashion and the number of channels used, as well as the level of product knowledge. As consumers become more involved in fashion products, they develop stronger subjective perceptions, expertise in the product, and proficiency in the online fashion purchasing process.

The interviews revealed that successful planning for online shopping experiences should focus on making the process as enjoyable as possible. The key elements include structuring the application to mimic a real purchasing situation and ensuring rapid delivery of goods. For consumers highly involved in fashion, the authenticity of the purchasing situation is less important. These respondents were particularly sensitive to artistic, high-quality online images (Table 1). High-quality images, fabric descriptions, and models showcasing the products from various angles were among the top features mentioned. The respondents with less interest in fashion did not prioritize accurate filtering for clothing fit. A notable advantage of these applications is the ability to fix filters for an improved shopping experience.

These findings align with the previous studies that underscored the importance of a wide variety of brands and artistic pictures on e-commerce sites, demonstrating how these elements enhance the online shopping experience [44–46].

Although the pre-purchase experience in fashion is typically based on offline research or previous experiences, purchasing decisions for special garments can be highly impulsive. The most relevant factors for the online shopping of clothes include free shipping and a money-back guarantee. Many respondents also reported finding “fun” and excitement in discovering unique items. A clear process flow is crucial for retailer selection. Factors such as shipping price information and delivery timeframes were highly important to most interviewees. Table 2 provides an overview of respondent motivations, the advantages of online shopping, and contextual factors.

Table 2. Overview of the themes identified in the aspect of the motivation of using AR applications, online searching of fashion products, and context of usage.

Motivation	Why Online?	Contextual Factors
Fashion involvement; fashion awareness; “changing fashion trends”; emotional needs: “I need to buy some new clothes”; casual wear, suits, dress shirts, and casual slacks; trends unless a major change takes place; and “Check to see what is currently fashionable”.	Wide variety of brands, contain product descriptions to give detailed character to products, presenting new products, introduce new clearances, make it easy to buy the right size, average user-generated content, (customer reviews) helps the decision, read customer reviews, presenting related products, presenting related accessories, size guide, recommended products, accessories, multiple images, and view products in different colors.	Shopping value, store visit intentions, entertaining experiences, utilitarian value, impulsive buying, examining the online search process through visual context, experiential visual solutions, and fantasies

Source: own research

The context of using augmented reality is “entertaining”, “fantasy”, and “fun”, as it enables trying different colors and accessories. AR enhances engagement and impulsive purchasing. However, drawbacks are linked to the consumption context, such as the physical store visit intention and the desire to “feel and touch the texture of the fabric”. Contextual factors play a significant role in shaping consumer motivations. The complexity of decision making varies: T-shirts, accessories, functional clothing, and lingerie are simpler, while clothes, shoes, and suits are more complex. Several participants explained that their decisions spanned days, involving both offline and online searches.

In testing applications, the interviewees were tasked with scenarios such as registering, signing in, finding clothes, and changing items. The applications examined included H&M, Zara, 2019 IKEA Place, YouCam Makeup, Google Lens, and Roar. The participants were asked, “Why would I use it?” and “What are the advantages of using AR applications versus e-commerce websites?” The following nine categories were mentioned by at least 10 percent of the participants:

1. Enhanced product visualization;
2. Try-before-you-buy experience;
3. Improved engagement;
4. Impulse buying facilitation;
5. Enjoyable and entertaining shopping;
6. Discovery of unique items;
7. Customizable filters for better search results;
8. Detailed product information;
9. Visual context for decision making.

Figure 1 illustrates the advantages of augmented reality (AR) applications in the fashion purchasing process, as identified by interviewees in the conducted research. The largest segment, representing the primary benefit, is the ability to find style, indicating that users highly value AR’s capacity to assist in identifying suitable fashion styles. Following this, significant emphasis is placed on the feature that helps visualize how items go with different outfits, highlighting the importance of AR in aiding users to mix and match clothing items effectively. The next prominent advantage is the identification of the best-suited color combinations, showcasing the utility of AR in color coordination. Other notable benefits include the appreciation for how items are presented, search by size functionality, and the ability to try on different colored items, which collectively enhance the shopping experience. Additional features such as 3D icons, the opportunity to share pictures with friends, and useful customer reviews also contribute to the overall appeal and effectiveness of AR applications in fashion retail. This comprehensive evaluation underscores the multifaceted enhancements AR provides, facilitating a more informed, convenient, and enjoyable shopping process for users.



Figure 1. The advantages of using AR applications in the fashion purchasing process mentioned by the interviewees (Source: own research).

Based on the mentions, the most frequently occurring top-of-mind responses regarding the criteria of visuality and content on AR applications were as follows: inspiration, easy-to-use filter system, ratings, product information (color options, pricing, and fabric), the ease of comparing items and brands, adequate smartphone screen size, providing context for tasks to mimic natural interactions, the touch and feel of the fabric, easy-to-move and use icons, experiences, stories and tips, the presentation of similar products, image-based fashion search, fashion news, lifestyle websites, resold items, search by picture, the types of fabric, style, and comfort. Figure 2 illustrates the frequency of these responses. Top-of-mind awareness refers to the brand or product that first comes to a consumer’s mind when thinking of a specific category, indicating strong brand recognition and recall [47].

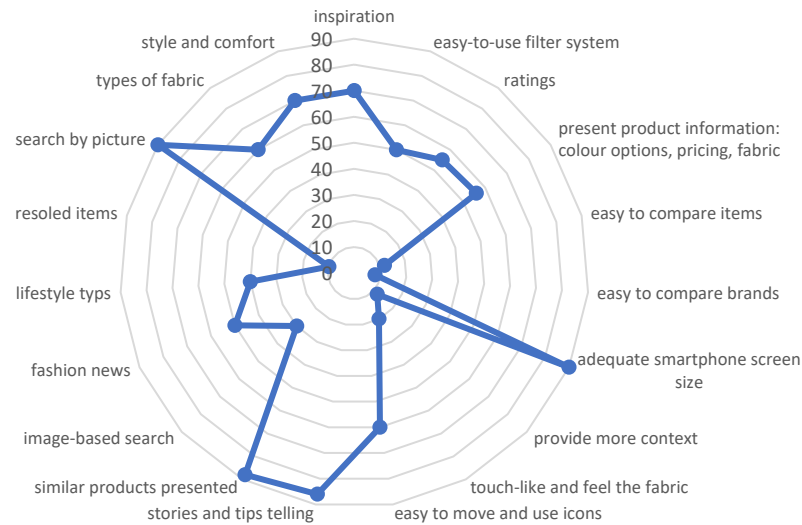


Figure 2. The key criteria for using AR applications as mentioned by the respondents (Source: own research).

The most important criteria for young customers for using AR applications are visualized in Figure 2. They include an adequate smartphone screen size, the ability to find similar products from different brands, the option to search by picture, and the inclusion of stories and fashion tips. Other important characteristics include inspiration, showcasing style and comfort, and presenting detailed product information, as highlighted during the interviews.

4. Conclusions

Online fashion retailers should consider integrating new media platforms and technologies into their strategies. Digital marketing has become essential, even for those traditionally dedicated to conventional marketing methods. New digital technologies, such as augmented reality (AR) applications, create virtual illusions that effectively engage users in a virtual world, imitating the offline shopping experience online. AR is posited as the new frontier in retail innovation and is expected to transform fashion e-commerce in the coming years.

The study reveals several factors that influence the use of AR applications in online fashion retail. Firstly, the specific factors include technological advancements, user-friendly interfaces, positive consumer attitudes towards new technologies, and sustainability concerns. These factors encourage the adoption and usage of AR in online shopping. Visual technology solutions like AR enhance the customer experience by providing immersive and interactive shopping experiences, such as virtual try-ons and digital avatars, which help in visualizing products accurately. This interactive element not only makes shopping more engaging but also aids in better decision making.

AR applications are most utilized during three main stages of the online fashion purchasing process: the pre-purchase stage for product evaluation, the purchase stage for making informed decisions, and the post-purchase stage to reduce returns. In the pre-purchase stage, virtual try-ons and product visualizations help customers evaluate and select products. During the purchase stage, AR enhances confidence in purchase decisions by providing the accurate representations of products. In the post-purchase stage, AR helps to reduce returns and increase satisfaction by ensuring customers receive what they expect.

Gen Z consumers perceive several benefits from using AR applications for online fashion shopping. They report enhanced shopping experiences, convenience, personalized interactions, and the ability to share their experiences on social media, making shopping more engaging and enjoyable. AR applications provide a fun and interactive way to try on clothes and accessories virtually, aligning with Gen Z's tech-savvy preferences and social media habits. This demographic appreciates the convenience of being able to visualize

products accurately and the personalized shopping experience that AR provides, which contributes to their overall satisfaction and loyalty to brands using this technology.

From a managerial perspective, this exploratory paper investigated the use of the internet and e-commerce channels in the fashion purchase process. Higher interaction rates, a wide variety of brands, detailed product descriptions, 3D product presentations, direct buying options, and the ability to compare brands and items are the most highlighted advantages of AR shops for young fashion customers. AR has the potential to revolutionize fashion e-commerce, being easy to use and interactive not only with retailers but also with friends and communities. Young customers desire more than an average shopping experience and use various channels to share their experiences. The viral effect can be strong when using AR applications.

AR applications provide a multitude of experiences that align with the digital inspiration and shopping activities of users. The findings of this research highlight the most important online channels at the different stages of the purchasing process, capturing the main impact of AR technology on customer satisfaction levels. New trends, technologies, and shifting consumer needs present opportunities for companies with the resources to participate in technological change. The impact of brands on young fashion customers and customer behavior will change dramatically due to enhanced visual experiences and instant purchase possibilities. The benefits of using multiple digital platforms include diverse product visualization, improved customer service, online communities, and market research through concept testing. Increasingly, brands and retailers are investing in immersive technologies for customers. This paper focuses on young customers, recommending further detailed measurement criteria based on each usability factor.

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Informed Consent Statement: Publishing research findings was performed responsibly: they do not violate personal rights, honor, or reputation. The research conducted among the students at Budapest Business University was carried out on a voluntary basis, with the knowledge and consent of the participants, and their personal data were protected.

Data Availability Statement: The data presented in this study are available upon request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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