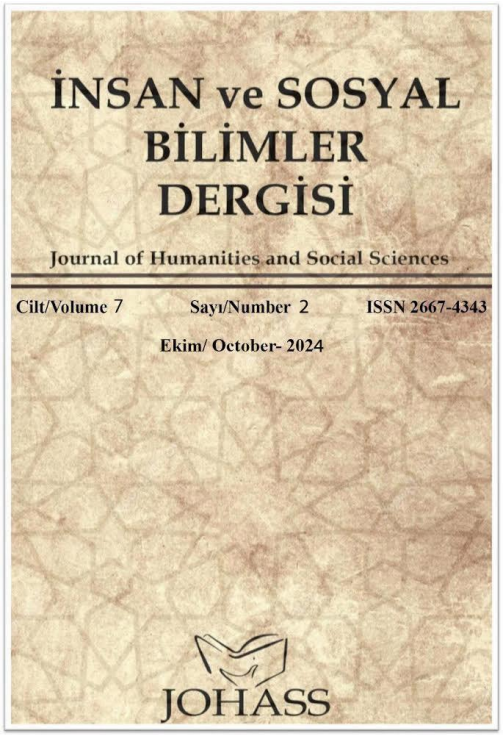
JOURNAL OF HUMAN AND SOCIAL SCIENCES (JOHASS)



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Use of Artificial Intelligence in Fashion Sales Techniques

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Article Type: Research Article
Received: 15.04.2024
Accepted: 29.10.2024
Published online: 29.05.2024

Citation: Boğday-Saygılı, B., & Dilber, C. (2024). Use of artificial ıntelligence in fashion sales techniques. *Journal of Human and Social Sciences*, *7*(2), 233-258.

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Abstract

This article discusses the prominent elements of artificial intelligence innovation in fashion sales techniques and details artificial intelligence-supported sales strategies such as virtual reality, augmented reality, virtual try-on rooms, smart mirrors, artificial intelligence-supported style consultants, visual search technologies and chatbot. This study was written with the compilation method. The compilation method is written with the aim of collecting the literature written so far on the research subjects from a scientific perspective and making a collective contribution to the literature. While virtual reality and augmented reality offer customers interactive shopping experiences and the opportunity to try products in their own environment without going to the store, virtual trial rooms and smart mirrors; Studies have shown that it has the potential to make online and face-to-face shopping easier, faster and more interactive. It has been stated that visual search technologies enable customers to easily find the products in the style they want, and artificial intelligence-supported style consultants and chatbots play an important role in optimizing the shopping experience by making personalized suggestions to customers. New and innovative solutions can be produced by conducting studies that encourage interdisciplinary collaboration between fashion designers, software developers and academicians. In this period when we live intertwined with technology, artificial intelligence-focused modules can be added to academic curricula for students studying in the field of design, and these modules will provide benefits for students to gain knowledge and skills on how to integrate artificial intelligence technologies into fashion design. The effective use of artificial intelligence in fashion sales techniques will provide a competitive advantage against competitors in the industry.

Research Article

Received: 15.04.2024
Accepted: 29.10.2024
Published online: 29.10.2024

Keywords: Fashion sales techniques, artificial intelligence, artificial intelligence and fashion, AI-driven sales strategies, AI sales strategies

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Introduction

Clothing, one of the most basic needs of human beings, was first used to keep up with the environmental conditions in which people live. Although fashion and clothing are often thought of as the same thing, the word fashion; It comes from the Latin word "modus" and means style. (Tunalı, 2004; p. 108). According to Hakko, the definition of fashion is "the phenomenon of temporary tastes belonging to a certain period", which occurs when some objects become popular for a short time and for no reason (Hakko, 1983; p.1). When we look at the historical development of fashion, in the 18th century, when the concepts of craft and art different from each other, tailoring was accepted as a craft and thus separated from art. The emergence of the concept of Haute Couture in the 1860s enabled fashion to gain an artistic perspective. It is thought that British designer Charles Frederick Worth, who is considered the founder of Haute Couture, played an important role in the formation of this system (Swendsen, 2008; 88-89). The concept of 'Haute Couture' means "high fashion" in French. This concept; It is used for elite, specially designed clothing with high prices. Haute Couture clothes consist of clothing collections prepared by famous fashion designers in large fashion companies and fashion houses (Bilgen, 2002; p.18).

After the industrial revolution, there were rapid developments in the technologies used in the textile sector, as in many other sectors. In the first years of the 19th century, with the advances in printing and weaving machines and the discovery of aniline dye, the use of various colors and textures on textile surfaces increased. The sewing machine developed during this period was rapidly adopted in the fashion industry, thus creating a suitable basis for ready-made clothing (Iwagami 2010, p.154). The decrease in textile production costs after World War I, along with technological developments in the late 19th and early 20th centuries, made fashion products accessible to the public. In the light of these developments, the concept of ready-made clothing retailing emerged in the second half of the 20th century (Ertürk et al., 2013: 12). With the rapid progress of ready-to-wear retailing since the 20th century under the influence of the 4th Industrial Revolution, the concept of fashion marketing has become increasingly important. Fashion brands have begun to develop digital marketing strategies for purposes such as offering personalized suggestions to consumers, ensuring brand loyalty and making a difference in the competitive market.

Today, at the latest point of technological developments, the concept of artificial intelligence has emerged. Artificial intelligence; It is defined as “a computer or computer-aided system that has the potential to perform complex logical processes similar to human

competencies, such as generating solutions, perceiving, inferring meaning, generalizing and benefiting from past experiences" (Nabiyev, 2012). Artificial intelligence, which has started to be used in many sectors, also plays an important role in fashion sales techniques and brings transformation and developments in sales techniques. One of the first uses of artificial intelligence in fashion marketing was chatbots. With this system, customers' questions can be answered at any time of the day and personalized suggestions can be offered. With the increasing use of e-commerce, artificial intelligence offers very important usage opportunities for fashion retailers. For example, thanks to artificial intelligence, companies offer personalized suggestions to customers based on the customers' product preferences, searches on the internet and past shopping data, and thus increase sales rates. Another artificial intelligence-based application in the field of online shopping is applications that offer virtual try-on opportunities (3D Look, n.d.)

Although artificial intelligence is thought to be used mostly during online shopping, it is also used in in-store sales. For example, artificial intelligence can offer alternative products and make combination suggestions in the store environment, without the need for the sales representative to check the stock, in case there is no size or color left that the customer wants to buy. Another artificial intelligence technology applied in stores is smart mirrors. Thanks to these mirrors, customers are given the opportunity to try on clothes, find their size, and offer style suggestions for the product they are looking for, without the need for a dressing room. In this way, the customer can have a shopping experience without the need for a sales consultant (Fashion Retail Academy, 2023).

In light of this information, the integration of artificial intelligence applications and fashion sales techniques has the potential to provide a competitive advantage for brands in the sector. In today's world where consumer expectations are changing rapidly, how fashion brands can use technology to maximize customer satisfaction is a big question mark. Nowadays, as digitalization accelerates, many changes in sales techniques are observed in the fashion industry. Traditional sales approaches are no longer sufficient to meet customer expectations, and this necessitates the use of new technologies. However, although there are resources on the use of artificial intelligence applications in the fashion industry, the resources in the literature on how it can be used effectively in fashion sales strategies are limited. This research is based on the hypothesis that artificial intelligence-supported sales techniques will increase customer satisfaction and accelerate purchasing processes in fashion retailing. Research findings are expected to show that artificial intelligence strengthens personalized shopping experiences in

fashion retail and creates positive effects on consumer behavior. It is also predicted that it will be concluded that artificial intelligence-supported sales strategies such as virtual rehearsal rooms, smart mirrors, visual search engines and artificial intelligence-based style consultants accelerate consumer decisions and increase sales rates.

In this article, we will examine how artificial intelligence for fashion brands changes the way fashion brands sell clothing and fashion products both offline and online, examine the use of artificial intelligence technology in fashion industry sales techniques, comprehensively discuss the applications of artificial intelligence in the sales techniques of fashion brands, and develop emerging technologies. It aims to offer fashion brands a perspective for future technological developments with artificial intelligence technology and to create a qualified source for the literature.

Method

Model

This study was written with the compilation method in order to examine the development of artificial intelligence applications for sales techniques in the fashion industry and their effects on fashion sales techniques. The compilation method is written with the aim of collecting the literature written so far on the research subjects from a scientific perspective and making a collective contribution to the literature. Compilation articles, experiments on researched topics, etc. These are articles that lead to application studies.

Population and Sample

While the universe of this research consists of all sources containing the use of artificial intelligence in fashion sales techniques, the sample of this research consists of all written sources related to fashion sales techniques. In this research, since there are no scientific sources about fashion sales techniques yet, we included the written sources, which are not scientific research, in this research by passing them through a scientific filter.

Data Collection Tools

A comprehensive literature review on fashion industry and AI integration; It was done by scanning academic databases, Haliç University library, scientific journals, e-books, conference proceedings, promotional articles about artificial intelligence used in fashion sales techniques and current report sources regarding the sector.

Data Collection and Analysis

By systematically examining these sources obtained through the study, it is aimed to summarize and present together the existing information in the field. A review study contributes to summarizing the ideas and approaches of existing studies or preparing a synthesis study consisting of these studies (Herdman, 2006). One of the characteristics of a good review article is to analyze existing studies in the literature well and present new ideas and perspectives to the literature (Bolderston, 2008; Callahan, 2010; Hagger, 2012). In this context, this research study was created by examining all sources related to fashion sales techniques and artificial applications used in fashion sales techniques from a scientific perspective and filtering the information. Analyzes were made within the scope of the benefits they provide to people. This study will benefit new applications and research.

Findings

The concept of fashion marketing is defined as a business strategy and the use of various methods aimed at existing and potential customers by focusing on clothing-related products and services in order to achieve an organization's long-term goals (Easey, 2009). The first step for effective fashion marketing is to analyze the demographics and trends of the target audience in detail. Any step taken without understanding the target audience and identifying the factors that affect them may cause the prepared collection and fashion marketing strategies to fail (Duran, 2013).

Artificial intelligence applications that have emerged with technological developments are different from traditional sales strategies in the fashion world and bring many innovations to the industry. These groundbreaking technologies are not only improving the shopping experience of customers but also drastically changing the sales strategies of fashion retailers. It adds a new dimension to fashion sales strategies by combining disciplines such as artificial intelligence technology, big data analytics and machine learning in areas such as understanding customer preferences, providing personalized suggestions, chatbots, virtual reality and augmented reality. The transition from traditional sales methods to artificial intelligence-supported fashion sales techniques play an important role in determining the future potential of artificial intelligence applications in the fashion industry, bringing together customer satisfaction, efficiency and competitive advantages in the industry.

Chatbots (Chat Robots)

With the rapid development of technology, artificial intelligence applications are effective in fashion marketing as in every sector. One of the first applications where artificial intelligence is used in fashion marketing is chatbot applications. Chatbots are defined as chat robots that users interact with via messages on digital platforms as if they were talking to a human being and use them for purposes such as taking action on a subject, getting information, asking questions (Chatbot Ai, n.d.). Fashion chatbot technology is an important area of research due to its potential to revolutionize the retail industry (Murtarelli et al., 2022).

The use of chatbots in the fashion industry is increasing day by day due to the possibility of providing personalized shopping experiences and increasing customer engagement (Landim et al., 2022). Chatbots; It saves time for fashion retailers and customers, can remember customer preferences and past shopping experiences, and thus ensure customer satisfaction and loyalty (Murtarelli et al., 2022; Landim et al., 2022). The goal is to deliver a personalized and engaging shopping experience that increases customer loyalty and increases sales. Fashion chatbots can also be designed with specific features such as virtual wardrobe organization, outfit recommendations and product reviews.

Chung et al. (2020) state that fashion companies are using the latest technology to improve the personalization of shopping experiences. Chatbot technology in the e-commerce industry helps customers in their online shopping experiences by creating interaction between the brand and the customer (Pantano et al., 2022). Some of the popular fashion brands using chatbot technology in this way include Burberry, Tommy Hilfiger, and Victoria's Secret. Tommy Hilfiger company has advanced chatbot technology with chatbots on Facebook to answer customer questions. Chatbots have the ability to provide automatic customer service assistance and personalized recommendations, which contributes to increased customer satisfaction (Ruan & Mezei, 2022). Additionally, incorporating chatbots into business operations can provide significant cost savings by reducing the need to employ customer service representatives (Hsu & Lin, 2023; Ngai et al., 2021).

Chatbots use a combination of visual AI and machine learning to improve their insights and capabilities over time. The chatbot can initiate a conversation, ask the customer about their preferences, and suggest appropriate clothing for the customer. The customer can indicate which products he likes, and thanks to the chatbot fashion tagging technology, he can instantly select and display similar products carefully selected from millions of products. Nowadays, customers want to find what they want with the least amount of trouble when shopping online,

and chatbots can provide instant information, suggestions and assistance by switching between databases containing millions of clothing products in seconds (Aslam, 2023).

Fashfed Company Chatbot Application

Turkish fashion retailer Fashfed uses Intelistyle's chatbot to engage with its customer base. The bot can make style suggestions just like a stylist would. During the interaction, the chatbot asks the customer questions such as clothing style, body type and skin color in order to provide personalized recommendations for clothes in the Fashfed catalogue. Customers can also upload images of outfits to get suggestions on what to wear or find visually similar products (Intelistyle, n.d.).

Louis Vuitton Brand Chatbot Application

Louis Vuitton takes advantage of its 23 million Facebook page by integrating a chatbot into its Facebook page. The chatbot can answer customer questions, recommend an ideal product to the customer from the product catalog, provide information about Louis Vuitton, and allow customers to get a second opinion by sharing the products with their Facebook friends (Figure 1) (Intelistyle, n.d.).

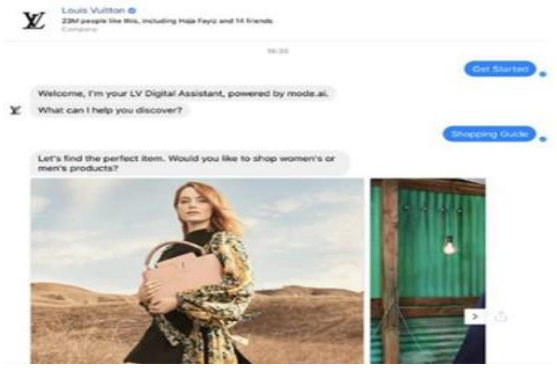

Figure 1. *Sample conversation with the chatbot of the Louis Vuitton brand (Intelistyle, n.d.).*

Tommy Hilfiger Brand Chatbot Application

Tommy Hilfiger, which started using chatbots in 2016, is one of the first brands to use chatbots. The company used a chatbot to launch its new TommyXGigi collection at New York Fashion Week. The chatbot named TMY.GRL was integrated with Facebook Messenger, providing customers with an online customer advisor experience. The chatbot recommended products from the collection, asked questions about customers' preferences, and then made personalized recommendations for each customer. The chatbot application, which is becoming

more developed today, acts as a stylist who brings together all the clothes, including accessories and shoes. If you like the recommended products, the chatbot quickly determines your size and shipping address before directing you to the website for the payment step. Additionally, the chatbot constantly offers new options by suggesting you try different styles or watch videos of the collection, thus spending more time on the site and increasing the likelihood of sales (Figure 2) (Intelistyle, n.d.).

Figure 2. *Sample conversation with the chatbot of the Tommy Hilfiger brand (Intelistyle, n.d.).*

Burberry Brand Chatbot Application

Luxury fashion brand Burberry chatbot offers customers looks and behind-the-scenes videos of models wearing Burberry clothes at fashion shows and similar products and accessories related to products the customer is interested in; recommends with prices and links to the Burberry website. The chatbot can also ask you for your location, give you directions to the nearest store or fashion show, and even help you book an Uber for transportation (Figure 3) (Intelistyle, n.d.).

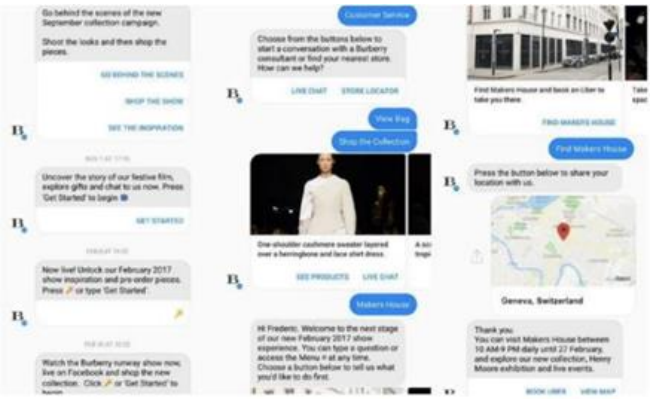

Figure 3. *Sample conversation with the chatbot of the Burberry brand (Intelistyle, n.d.).*

Virtual Reality (VR) and Augmented Reality (AR)

The concept of virtual comes from the word 'virtualis', which expresses the situation of creating an illusion as if something that does not actually exist by directing perception. The concept of Virtual Reality is based on the principle that the user is included in a created image space within an editable time frame and then interacts with this environment. Virtual reality includes various data input and output technologies; It is defined as an environment consisting of technological elements such as devices that imitate sensory effects such as movement and touch, sound devices and three-dimensional images (Kuruüzümcü, 2010, p. 94). Virtual reality is when the user enters a completely virtual world, can interact with this virtual world, and the real world can be imitated with this virtual world (Şahin & Kaya, 2019, 32).

Augmented reality is; It is a technology that combines virtual and real images, provides real-time interaction and integrates virtual elements into the real world (Azuma, 1997). By adding virtual content to the real world image, it provides the user with an experience without being separated from the real environment (Tuğal, 2018). Augmented reality, created through software and digital devices, allows digital content created on the physical world to coexist (Craig, 2013). Augmented reality technologies consist of adding audio, images, video, text, two- or three-dimensional animations produced by computer software simultaneously onto the real world image. Smart mobile devices, which are used by almost every individual today, make augmented reality applications accessible and widely used (İçten & Bal, 2017).

Virtual reality and augmented reality, which have started to be used in many sectors, are also frequently used in the fashion industry. It allows customers to try on clothes and accessories virtually without visiting the physical store.

SG and AR Technology Application Examples of Fashion Brands

Virtual Rehearsal Rooms

Fashion retailers frequently use virtual clothing fitting room applications. Virtual clothing fitting room is a technology that allows customers to try on clothes and accessories in a virtual environment, eliminating the need for physical try-ons. Using VR or AR, this technology offers a different experience by allowing customers to see how different clothes will look on their body. This technology creates the impression that the person is actually wearing the clothes or accessories he chooses, allowing him to examine details such as the fit of the outfit to his body, color, fabric and pattern (Audaces, 2023). Generally, the mechanism of use

of this technology is as follows; In order to create a model that represents the user's appearance, the user enters basic information such as height, weight and body measurements into the system. The user, whose virtual model is created, chooses the clothes and accessories they want to try on from the system and sees the product they have chosen on the virtual model they have created. In some more developed virtual clothing rehearsal rooms, the product worn on the model can be viewed from various angles in 360 degrees, the size of the selected clothing can be adjusted, different clothing combinations can be made, and the virtual try-on images can be shared with their surroundings and social networks (Audaces, 2023).

Today, many fashion brands have adopted virtual clothing fitting room technology. For example, the famous fashion retailer Topshop has established a virtual fitting room system via AG and Microsoft Kinect. With this application, customers can see themselves wearing an outfit in 3D on the screen. Another fashion brand, Tommy Hilfiger, used the AG virtual fitting room for its campaign called Prep World, allowing people who use mobile phones and are close to Tommy Hilger's pop-up store to contact the brand, so users can see the products in the collection on themselves through their phone cameras. (Aviso, 2023). Nike company helps users choose the most suitable shoes for them with its artificial intelligence-supported application called Nike Fit (Yılmaz, 2023).

Figure 4. *An example of an AR display for in-store shopping of the Tommy Hilfiger brand (Shaul, 2023).*

Gap brand's Virtual Dressing Room and Asos' See My Fit application give customers who shop online the chance to make conscious choices. These applications offer users the opportunity to view augmented reality versions of clothing products on avatars that reflect their own body measurements. Fashion luxury brands are also using augmented reality technology. For example, the Dior brand offers potential customers the chance to try DiorSoLight

sunglasses virtually. This application allows users to see their sunglasses in a virtual environment by using a special Instagram filter on their own facial images (Lloyd, 2022).

SG Showrooms

SG showrooms allow customers to try and purchase products online. With this technology, retailers can use high-resolution 3D images and videos, product descriptions, zoom features and customization options. For example, Alibaba Buy+, a virtual reality shopping platform from Alibaba, offers customers the opportunity to explore the store, browse and interact with products using VR glasses, and purchase (Aviso, 2023). Brands such as Uniqlo, Zara, Rebecca Minkoff, American Eagle have also started to use systems that make physical recommendations to consumers with artificial intelligence-based smart stores and fitting rooms (Yılmaz, 2023).

Smart Mirrors

Smart mirror technology is an interactive technology that simulates the actual dressing experience of trying on clothes without physically wearing them. This technology offers customers the opportunity to try on clothes practically and quickly thanks to the mirror's screen (Blázquez, 2014; Lee & Xu, 2020). Smart mirrors have the potential to revolutionize the fashion industry by providing a more efficient, personalized and interactive shopping experience for customers using information and communication innovation (Amendola et al., 2018). It provides access to many information such as stock status and customer evaluations on social networks (Kent et al., 2020). Giving customers access to such information through digital displays and interactive touch screens increases interaction with customers (Kent et al., 2018; Kim et al., 2020). Savastano et al. (2016) argue that information and communication devices connected to social networks enhance the in-store shopping experience by creating new arrangements and making products more identifiable and purchasable. With the integration of information and communication interfaces, the physical store customer experience becomes increasingly similar to that of an online shopping environment, resulting in a more seamless customer shopping experience.

Smart mirrors integrate passive technologies that are mostly invisible and have a significant impact on the in-store experience. RFID, an advanced identification technology, enables products to be tracked and located throughout the store by remotely reading the information on product labels (De Marco et al., 2014). Sensors in RFID can be used to collect

data on customer behavior. For example, it can provide data such as how much time customers spend in a particular store section, which products they interact with, and which products they purchase. These data can be used to optimize store layout and product placement and to develop targeted marketing campaigns to customers (Rallapalli et al., 2014). RFID technology provides retailers with benefits such as managing inventory, analyzing customers' consumption habits and patterns, reducing transaction errors and accelerating the payment process (Roussos, 2006). RFID benefits customer experience by allowing customers to optimize the payment process by scanning product codes instead of waiting in line at the checkout point, to check the availability of different sizes, and to easily find products in the store via the smart mirror touch screen (Roussos, 2006).

Swedish fashion retailer H&M Group offers its customers many shopping opportunities enabled by artificial intelligence technology, including smart mirrors that offer personalized style recommendations (Figure 5) and virtual try-ons, in its Cos stores in the USA. H&M Group officials say the launch of the new in-store technology-based shopping experience is part of their goal to build more interactive and meaningful relationships with consumers. Among the technology solutions in the first pilot store where smart mirror technology is used, it is equipped with smart mirrors that recognize the characteristics of the products brought to the dressing room, such as model, size and color, and offers customers the opportunity to offer personalized products and services and make style suggestions. Other types of smart mirrors can also be used in the store for virtual trials. In addition, H&M officials state that they are testing new payment method applications and developing the technologies they use for more sustainable delivery and returns (Wright, 2022).

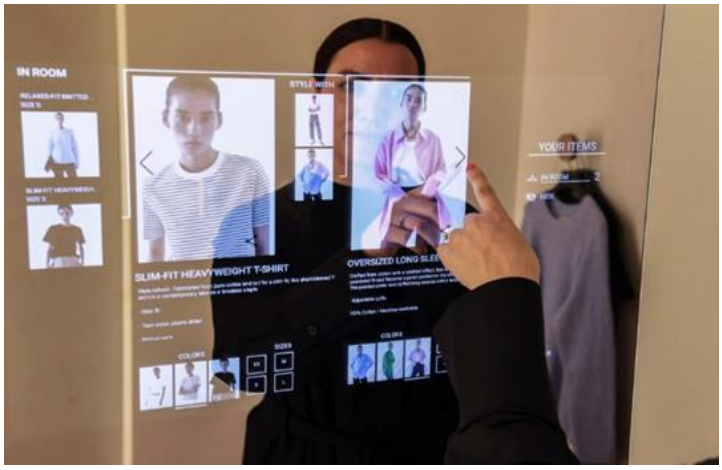

Figure 5. *Smart mirror used in COS store (Wright, 2022).*

Another company that uses smart mirror technologies is the world-famous sportswear company Adidas. The company's new store on London's Oxford Street also uses the 'Bring It to Me' application, which uses in-store location tracking to provide customers with a seamless navigation experience within the store. This Adidas app includes a lot of technology, including the ability for shoppers to scan items, check out the assortment, request sizes, and make their purchase immediately after purchase without the hassle of waiting in the checkout line. Interactive dressing room mirrors use RFID (Radio Frequency Identification) technology to identify products and provide information so shoppers can request different sizes and colors without leaving their location. There are more than a hundred digital touchpoints throughout the store (Figure 6) and each of these technologies aims to improve the customer experience or inspire creativity in visitors (Brown,2019).

Figure 6. *Smart mirror used in the Adidas store on Oxford Street in London (Brown,2019).*

Image Search

Visual search is an important part of personalized shopping using artificial intelligence applications. The fashion industry is one of the sectors that needs and uses visual search the most. Visual search refers to a process that uses images instead of text input. This process has been used in search engines such as Google since 2001. Reverse image search refers to a search method in which an image is used to find another image. For example, thanks to visual search, it is possible to find a similar product when searching with the image of a popular product. While computer vision enables seeing the object, machine learning and neural networks enable the recognition of objects. The combination of computer vision and neural networks is leading to interesting applications of artificial intelligence in the fashion industry (Luce,2018).

Online fashion retailer ASOS has developed a visual search app that turns a customer's smartphone camera into a product search tool (Figure 7). The customer takes a photo of a product and the ASOS app can identify the shape, color and pattern of the product, match it with its own inventory and find similar products. For an online-only fashion platform like ASOS, this app is an extremely important e-commerce tool (Boyd, 2017). Many fashion retail brands such as John Lewis, Nordstrom, Hook and Urban Outfitters use visual search technology to enhance customers' shopping experience.

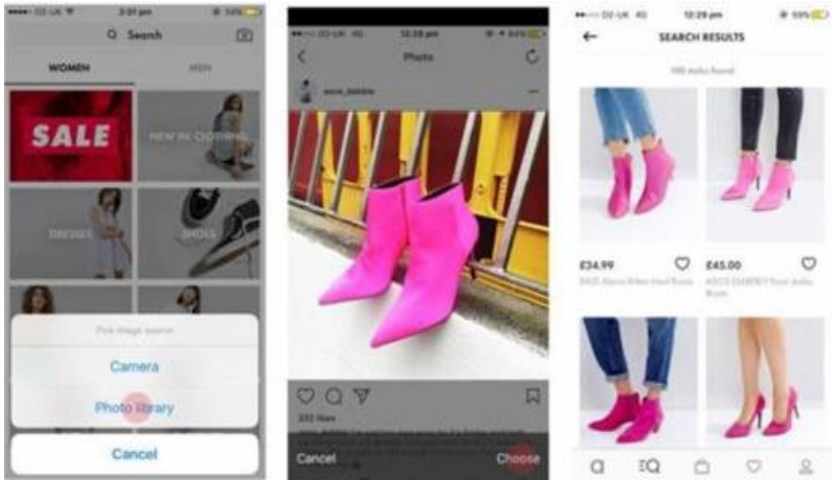

Figure 7. *Visual search application of ASOS company (Boyd, 2017).*

Artificial Intelligence-Powered Personal Style Assistants

Having a personal style consultant is one of the most advanced applications of personalized recommendation systems in fashion sales techniques. These applications are a combination of natural language processing, natural language understanding, computer vision, neural networks, and various types of machine learning technologies introduced so far. Virtual assistants that use automatic speech recognition, such as Apple's virtual assistant Siri, Google's virtual assistant Google Assistant, and Amazon's virtual assistant Alexa, are technologies that have been used for a long time. But the virtual style assistant emphasizes the use of images, having photo-taking, image recognition and visual search capabilities, as well as access to recommendation engines and fashion products.

For example, Amazon's virtual style assistant called Echo Look is the most well-known example (Figure 8). The hands-free camera technology in this virtual style assistant aims to provide users with feedback on their clothing choices. Using voice commands, Echo Look takes a photo of the outfit and provides reviews of the outfit based on trends and professional stylist opinions. It can also make personalized suggestions for better combinations based on clothes in the user's personal wardrobe or products available on Amazon. This service is offered by the

Style Check feature, which allows the wearer to show the better one of different style examples (Figure 9) (Luce, 2018).

Figure 8. *Amazon Echo Look device image (Lievendag ,2017).*

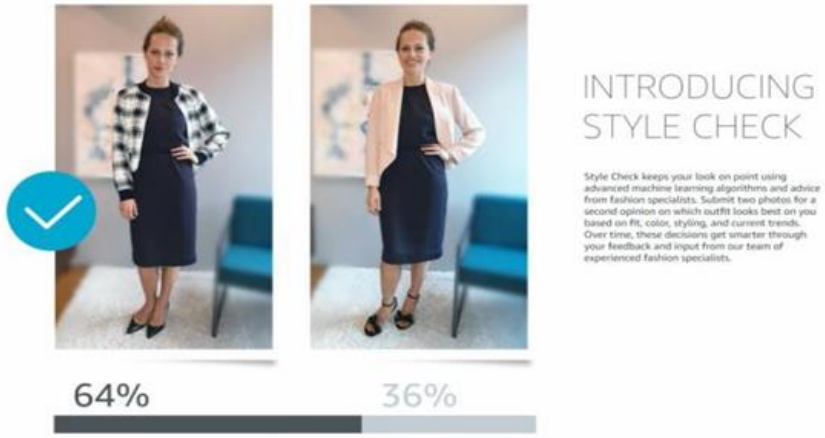

Figure.9 *Amazon Echo Look Style Check (Style Control) properties (Lievendag ,2017).*

AI-Powered Virtual Fashion Influencers

The concept of artificial intelligence-supported virtual influencers dates back to the early 2000s and was first used in video games and movies with the emergence of computer-generated characters. These virtual characters are created using various advanced technologies and are often used to promote products and brands in the virtual world. The use of virtual characters as influencers has become a rapidly rising trend with the rise of social media platforms such as Instagram and Facebook. Brands have created virtual influencers by taking advantage of the wide reach and interaction opportunities provided by these platforms, enabling them to establish innovative connections with their potential customers and followers (Chitrakorn, 2021).

The role of virtual influencers in fashion marketing is evolving in parallel with the evolution of technology and digital culture. First, the emergence of these influencers has

presented brands with the opportunity to develop innovative and interactive marketing strategies.

Today, the rapid advancement of AI technology has increased the influencing power of virtual influencers and made these interactions more important. AI algorithms are used to assign unique personalities, styles, and voices to virtual influencers, making virtual influencers closer to reality indistinguishable from human influencers in many cases (Chitrakorn, 2021).

Compared to traditional influencers, virtual influencers provide brands with the advantage of greater control and flexibility. While minimizing the risk of error compared to traditional influencers increases brand security, the unlimited potential in creative content production allows brands to create original campaigns in terms of sales and marketing strategies. In this context, the role of virtual influencers in fashion marketing is not only an innovative marketing strategy but also a phenomenon that reshapes brand and consumer relations. While fashion brands' collaboration with these digital characters strengthens their marketing strategies, it also enriches the customer experience and creates brand-loyal customers. The rise of virtual influencers creates new opportunities in the fashion industry, allowing brands to gain a competitive advantage.

The development of AI-powered virtual fashion influencers has had a significant impact on the fashion industry, influencing trends, shaping consumer habits and reshaping the concept of brand collaborations. Virtual influencers have become an important marketing and sales method for brands thanks to their large follower bases and high engagement rates. İnsanlardan farklı olarak bu sanal etkileyiciler özgünlük ve yaratıcılık sunarak moda ve sanatsal alanlarda sınırları zorlamakta, takipçilerine stilleri konusunda ilham kaynağı olmaktadır. Bunların yanısıra sanal etkileyicilerin markalarla yapmış oldukları iş birlikleri ile öne çıkmaktadır ve geleneksel pazarlama stratejilerinin çok etki edemediği, teknoloji kullanımının yaygın olduğu genç tüketicilere ulaşmanın etkili bir yolu oldukları değerlendirilmektedir (Allal-Chérif et al., 2024).

Sanal etkileyiciler, reklam ve pazarlama alanında sadece sosyal medya paylaşımları yapmakla kalmayıp aynı zamanda Instagram, Tiktok, Twitter gibi sosyal medya hesaplarından kampanya önerileri, markaların sosyal medya hesaplarına ve internet adreslerine yönlendirmeleri ve hashtag stratejileri ile etkileyici pazarlama ve satış yöntemlerine yeni bir soluk getirmektedir (Rasmussen, 2021). Unlike humans, these virtual influencers push the boundaries in fashion and artistic fields by offering originality and creativity, inspiring their followers with their style. In addition, virtual influencers stand out with their collaborations with brands, and they are considered to be an effective way to reach young consumers, where

traditional marketing strategies cannot have much impact and where technology use is common (Allal-Chérif et al., 2024).

Virtual influencers not only share on social media in the field of advertising and marketing, but also bring a new breath to influencer marketing and sales methods with campaign suggestions from social media accounts such as Instagram, TikTok, Twitter, directing brands to social media accounts and websites, and hashtag strategies (Rasmussen, 2021).

AI-Powered Virtual Influencers Used in the Fashion Industry

Imma Gram

Aww Inc. in Japan. Imma, the first virtual influencer and model in Japan produced by the company in 2018, collaborates with fashion brands. He has appeared in the campaigns of many high-end fashion brands such as Dior, Puma, Nike, Calvin Klein and Valentino (Figure 10)(Virtual Humans,n.d.)

Figure.10 *Imma Gram's Sharing Air Jordan model shoes for her collaboration with the Nike brand (Imma Gram,2022).*

Figure.11 *Imma Gram's sweatshirt sharing for her collaboration with the Hugo Boss brand (Baklanov, 2022).*

Lil Miquela

Lil Miquela is a 19-year-old Brazilian-American virtual influencer created by American AI company Brud. One of the most popular virtual influencers in the fashion industry, the influencer collaborates with brands such as; There are many brands such as Alexander McQueen, Hugo Boss, Calvin Klein, Prada (Storyclash,2024).

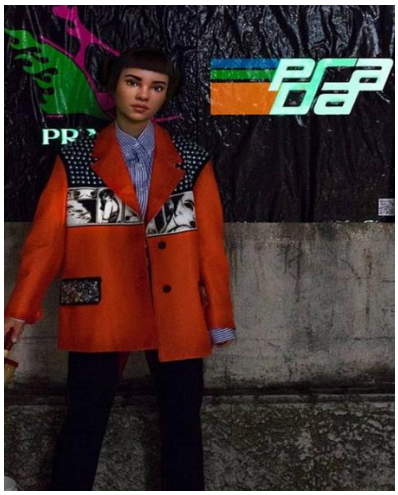

Figure.11 *Lil Miquela's collaboration with the Prada brand (Crouch, 2019).*

Kim Zulu

Kim Zulu is a virtual influencer created by the team at Avatar Company, a company based in Johannesburg, South Africa. Kim Zulu, South Africa's first virtual influencer, has increased her global fame with her appearances in Forbes USA and Elle China magazines, as well as Fashion TV, and her appearance at Mercedes-Benz Russia Fashion Week in 2020 (Mungadze,2021). He has collaborations with Kangol and Puma brands. Within the scope of the Kosmo Rider campaign prepared by the Puma brand, Kim Zulu took part in the futuristic photo shoot surrounded by the shoe model they called Kosmo Rider (Figure 12) (Rasmussen,2022).

Figure.12 *Kim Zulu's fashion shoot with Puma brand for the Kosmo Rider campaign (Virtual Humans, 2019)*

Discussion and Result

This article aims to evaluate the contributions of artificial intelligence technology to the fashion industry in terms of fashion sales techniques and the emerging new sales strategies by examining the use cases of artificial intelligence in fashion sales techniques in detail. The findings show that artificial intelligence offers potential advantages in improving customer experience, optimizing sales strategies and providing personalized service. The literature studies examined and the practices of fashion companies reveal that artificial intelligence in fashion sales techniques may play an even more effective and efficient role in the future, thanks to rapidly developing technology. In this context, it is important for fashion brands and the retail industry to integrate artificial intelligence-based sales techniques into their strategic planning in order to gain a competitive advantage in the sector.

Artificial intelligence-supported style consultants, chatbots and visual search technologies provide personalized recommendations by thoroughly analyzing the consumer's shopping habits. This allows consumers to have a more interactive and efficient shopping experience during the purchasing process. In particular, the use of virtual style consultants, augmented reality and virtual reality simulates the physical store experience during online shopping, facilitating consumers' purchasing decisions, which provides the advantage of increasing sales for fashion brands. Such applications increase customer interaction and create a stronger bond between the brand and the consumer. However, in order to establish this bond, artificial intelligence must be prepared in a more friendly and understanding way with the customer. In fact, it should be in line with cultural values as much as possible. In this way, even if customers know that they are not dealing with a human being, customer satisfaction will increase and a brand-customer bond will be established, as they will see that their own cultural values and the brand's culture are compatible.

Artificial intelligence-based sales systems also increase operational efficiency by automating in-store sales processes. In particular, smart mirrors and virtual fitting rooms offer customers the opportunity to shop faster and more effectively by reducing the need for sales consultants. These technologies eliminate the need for stock control in stores and make in-store experiences more efficient by recommending alternative products to consumers. Consumers have the opportunity to see the products they like on smart screens without having to physically try them on. In this context, it is seen that artificial intelligence increases operational efficiency in fashion sales techniques and makes sales processes faster. The only disadvantage of smart

mirrors is that they do not provide the feeling of touch. Therefore, especially kinesthetic customers still need to try the products. Smart mirrors accelerate sales even for people who are difficult to buy, as they give the garment's volume effect in terms of fabric and material.

Artificial intelligence technologies have become a strategic issue in fashion retailing, radically transforming traditional sales strategies. Especially the use of applications such as chatbots and visual search; It provides the advantage of providing fast and effective solutions to consumers' needs, questions and problems. In this context, the findings of the research reveal that artificial intelligence-based sales techniques have the ability to analyze consumer behavior and provide suggestions and answers accordingly. While these technologies increase the sales of fashion brands, they also make the shopping process easier and more efficient for consumers. Leading fashion brands adopt artificial intelligence innovation as a strategic element and integrate artificial intelligence-based technologies into their sales techniques. The fact that global fashion brands such as Burberry, Tommy Hilfiger and Louis Vuitton increase customer interactions by using chatbot and augmented reality applications and provide faster and personalized responses to customer demands reveals the wide-ranging impact of these technologies in the industry.

Artificial intelligence-supported virtual influencers, another sales and marketing strategy preferred by fashion brands, provide many advantages for brands. Unlike traditional influencers, these AI-based influencers are under the control of brands and have the opportunity to constantly interact with their target consumer base. It is thought that these virtual influencers can create a meaningful impact on the target audience of brands by producing brand-related, interesting and inspiring content, and this interaction has the potential to increase brand awareness and sales. Unlike traditional influencers, virtual influencers do not have the risk of making personal mistakes or damaging the brand image. These virtual influencers, who can work uninterruptedly 24/7, can bring high efficiency and sustainability to brands' marketing strategies. With these aspects, virtual influencers become not only a strategic marketing tool for brands, but also an element that can constantly strengthen the brand image. For this reason, the number of collaborations between fashion brands and virtual influencers is increasing day by day.

The literature studies examined and the practices of fashion companies reveal that artificial intelligence in fashion sales techniques may play an even more effective and efficient role in the future, thanks to rapidly developing technology. In this context, it is important for fashion brands and the retail industry to quickly integrate artificial intelligence-based sales techniques into their strategic planning in order to gain a competitive advantage in the sector.

Based on this important point, studies that encourage interdisciplinary collaboration between fashion designers, software developers and academics can be carried out. By bringing together different perspectives, these studies can enable the production of multidisciplinary, new and innovative solutions. In this period when we live intertwined with technology, artificial intelligence-focused modules can be added to academic curricula for students studying in the field of design, and these modules will provide benefits for students to gain knowledge and skills on how to integrate artificial intelligence technologies into fashion design. In addition, in order to encourage closer cooperation between software developers and fashion designers, internship and workplace training programs can be organized in the sector, thus allowing students to gain practical experience in the fashion industry integrated with technology before entering the sector. Ethical training and guides can be created for software developers and fashion designers, and the responsible and conscious use of artificial intelligence in the sector can be supported by emphasizing the compliance of artificial intelligence applications with ethical values.

The effective use of artificial intelligence in fashion sales techniques has the potential to provide competitive advantage to stakeholders in the industry. However, in order for these advantages to be sustainable, it is necessary to understand the responsibilities brought by technology and adopt a strategic approach in this context. However, in order for this technology to be implemented successfully, important issues such as ethical issues, customer privacy and data security should not be ignored. It is an issue that should be given great importance for companies in the fashion industry to adopt standards regarding the use of artificial intelligence and to harmonize their applications with these principles.

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