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# The PRISMA Statement: The Characteristics of Fashion Distribution Channels in Virtual Reality

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## Abstract

**Purpose:** Virtual reality's impact on fashion distribution extends beyond singular transactions, facilitating the emergence of novel collaborations. As investigating the characteristics of fashion distribution channels in virtual reality, this study explores how the fashion industry can utilize virtual reality distribution channels to their maximum capacity while minimizing potential disadvantages. **Research design, data, and methodology:** The approach used to gather previous studies for this study adheres to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology. This method is widely acknowledged and recommended for its systematic and transparent approach to selecting relevant literature. This kind of literature search plays a vital role in a systematic evaluation as it informs the results. **Results:** The finding indicates consistently a total of eight kinds of characteristics of fashion distribution channels in virtual reality. The result means that the attributes of fashion distribution channels in virtual reality are causing significant changes in the fashion industry, revolutionizing the consumer experience, and redefining the parameters of creativity and collaboration. **Conclusions:** In sum, the global reach and accessibility of modern technology enhance the capacity of fashion companies to expand their market presence. This facilitates their participation in intercultural interactions and allows them to serve a wide range of customers.

**Keywords :** Fashion Supply Chain, Distribution Management, Virtual Reality, PRISMA Statement

**JEL Classification Code :** Q11, L67, L90

## 1. Introduction

The fashion business is always on the cutting edge of technology. The fashion industry continuously seeks new innovative methods, from 3D fashion design tools to AI-created apparel and now, Virtual reality (VR) technology, to provide highly valued customer experiences. A VR is a computer-generated world featuring realistic-looking sights and objects that immerse viewers in their surroundings. Customers may see virtual try-ons of their favorite garments and purchase using VR. The fashion industry has undergone a significant transformation due to the advent of virtual

reality (VR) technology in an ever-evolving digital environment. The swift adoption of immersive experiences and virtual environments among consumers has compelled the need for expeditious adaptations in fashion distribution channels (Telukdarie et al., 2020).

The convergence of fashion and virtual reality has given rise to diverse prospects, offering innovative prospects for consumers and retailers alike (Jang, 2023). This essay examines the various dimensions of the transformative phenomenon of virtual reality and its impact on the fashion industry. This research investigates the effects of virtual reality on the retail sector, with a particular emphasis on its

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influence on the shopping experience and the emergence of various novel prospects.

Incorporating virtual reality technology into the fashion distribution sector offers retailers unique prospects for enhancing personalization and customization. By leveraging cutting-edge technologies such as augmented reality (AR) and 3D modeling, consumers can visually perceive clothing items in various hues, materials, and designs, customizing their selections to align with their preferences (Kim & Ha, 2021). The ramifications of such customization extend beyond mere consumer satisfaction; they possess the potential to substantially diminish product returns, thereby reducing waste and fostering a more sustainable fashion industry. As the examination of the extensive impacts of these technologies progresses, it becomes apparent that the attributes of virtual reality fashion distribution channels play a crucial role in shaping a novel period of consumer empowerment and ecological accountability.

Furthermore, virtual reality's impact on fashion distribution extends beyond singular transactions, facilitating the emergence of novel collaborations and partnerships within the industry. Virtual fashion shows and exhibitions allow designers to present their creations to a worldwide audience, liberating them from the limitations imposed by traditional in-person events (Jung et al., 2021). The democratization of access in the fashion industry enables emerging talents to attain recognition and facilitates cross-cultural exchanges, enhancing the fashion world with novel perspectives. As the examination of virtual connections progresses, a novel facet of creativity and community within the fashion ecosystem is revealed. However, as the fashion industry increasingly explores virtual reality, it is imperative to carefully navigate the potential challenges and ethical considerations that may arise. In order to ensure a responsible and inclusive implementation of these technologies, it is imperative to address concerns about data privacy, security, and accessibility for all consumers (Bertot et al., 2012).

By recognizing these obstacles and adopting ethical principles, the fashion industry can utilize virtual reality distribution channels to their maximum capacity while minimizing potential disadvantages. The attributes of fashion distribution channels in virtual reality are causing significant changes in the fashion industry, revolutionizing the consumer experience, and redefining the parameters of creativity and collaboration. The ramifications of this technological advancement have extensive implications, encompassing sustainability, personalization, and global accessibility (Ricci et al., 2023). In order to fully harness the potential of virtual reality within the realm of fashion, stakeholders must maintain a vigilant approach toward addressing ethical considerations and promoting inclusivity.

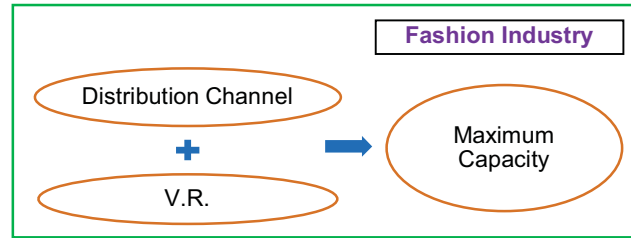


Figure 1: The Research Purpose

## 2. Literature Review

### 2.1. The Analyzing the Visual Behavior of Consumers in a Virtual Reality Fashion Store Using Eye Tracking

In order to effectively navigate the metaverse era, all industries must formulate novel approaches that integrate both physical and virtual environments. The prevalence of the metaverse has increased significantly due to the rapid shift towards contactless market trends prompted by the COVID-19 pandemic. The term ‘metaverse’ pertains to a three-dimensional virtual environment where individuals exist as avatars, representing their real-life counterparts (Kim, 2021; Jang, 2023).

The fashion and beauty industries consider sensory and emotional experiences to be crucial determinants that impact consumers' decision-making process in selecting products and retail channels. In light of this, fashion and beauty brands aim to connect the virtual and physical realms by establishing and introducing their virtual stores and products. Obsess, a startup specializing in developing virtual reality e-commerce platforms, experienced a significant surge in inbound inquiries during April 2020, following the onset of the COVID-19 pandemic. The observed increase amounted to a remarkable 300% compared to the average monthly figure of 2019. In 2020, several prominent fashion brands, such as Balenciaga, Burberry, Gucci, Vans, and Ralph Lauren, established virtual reality (VR) retail outlets (Jang, 2023).

The investigation of potential disparities in consumer behavior between virtual and brick-and-mortar stores remains a subject of ongoing inquiry, despite the persistent endeavors to integrate these two realms. This study, conducted by Jang (2023), aims to investigate the visual behavior of fashion consumers within immersive virtual reality stores through the eye-tracking methodology. Eye-tracking is a commonly used physiological technique (Hwang & Lee, 2017) in visual behavior analysis. It offers objective data during the execution of specific tasks by individuals. Consequently, the eye-tracking methodology is commonly utilized to examine the visual behaviors of

individuals in diverse domains (Hwang & Lee, 2017; King et al., 2019). This study contributes significantly to empirical research by utilizing eye-tracking technology in virtual reality (VR) environments to investigate immersive retail experiences. The study focuses on conducting a thorough analysis of visual behavior.

## 2.2. Consumer Satisfaction Through the Store Experience

In a competitive market, companies face a significant challenge in increasing consumer satisfaction by providing impressive shopping experiences (Ju et al., 2023). This is because consumer satisfaction has been found to have a positive impact on various outcomes such as word of mouth, customer loyalty, re-patronage, brand, and the overall formation of brand equity (Jang, 2023). Utilizing virtual reality (VR) technology presents a significant prospect for creating highly realistic simulations of fashion stores. Additionally, it is worth noting that consumers can acquire both store-related and product-related cues through their experiences in these virtual fashion stores. Conventional e-commerce platforms solely offer product-related cues, while they lack store-related cues.

## 2.3. Immersive and Desktop Virtual Reality in Virtual Fashion Stores

Given the significant expansion and success of e-commerce, the retail sector must investigate novel technological advancements that enhance the quality of digital shopping experiences. In the contemporary technological landscape, Virtual Reality has emerged as a valuable tool and a promising opportunity for augmenting shopping experiences, particularly within the fashion sector. The present research investigates the potential impact of Immersive Virtual Reality technologies on the shopping experience within the fashion industry compared to the utilization of Desktop Virtual Reality (Ricci et al., 2023).

In their study, Moes and Van Vliet (2017) investigated the phenomenon of customers' virtual shopping experiences in fashion stores through visual content. The findings of the study suggest that participants who were exposed to the virtual reality representation of the store reported a more positive shopping experience, demonstrated a higher intention to engage in a purchase, and expressed a greater inclination to visit the physical store in comparison to customers who were only exposed to the conventional photograph.

## 2.4. Hedonism and Utilitarianism in Virtual Reality

A within-subject design research investigation was undertaken, wherein a cohort of 60 individuals participated

in a simulated shopping encounter (Lombart et al., 2020). The study's results revealed that participants demonstrated higher levels of hedonism and utilitarianism when participating in shopping activities using immersive virtual reality compared to digital video recording. Both modes demonstrated comparable levels of cognitive load, although the Interactive Voice Response mode was determined to provide a more favorable user experience. The findings of this study have significant implications for research in the fashion industry, as the utilization of Interactive Virtual Reality has the potential to generate innovative shopping behaviors by augmenting the overall shopping experience (Ricci et al., 2023).

## 2.5. Usefulness and Ease of Use of AR and VR

The fashion retail industry relies significantly on advanced technology in the contemporary global economy. Technological advancements have made augmented Reality and Virtual Reality prevalent in the fashion retail industry (Javornik, 2016; McCormick et al., 2014). These interactive technologies have gained significance and are now widely employed. This study examines Augmented Reality and Virtual Reality, two distinct technological advancements garnered significant attention and interest in academic circles and the fashion industry in recent years (Javornik, 2016; Boardman et al., 2020).

## 2.6. Consumer Acceptance of Technologies

The advent of technology has profoundly impacted various aspects of our daily lives, encompassing communication and our interactions, and shopping habits. Technological advancements, such as augmented and virtual reality, can revolutionize conventional shopping practices and influence consumers' attitudes toward fashion purchases (Han et al., 2022). According to Piotrowicz and Chen (2003), the progression of technology has resulted in heightened consumer power and control during the shopping process. According to the previous investigation, the average daily time spent by millennials in Europe on social media platforms is approximately 180 minutes. It is not unexpected that the value of online fashion sales has experienced a twofold increase since 2012. In 2017, online sales constituted 24% of the total, reflecting a growth of 7% compared to 2013 (Tandon et al., 2017).

## 2.7. Technology Readiness Index on Centennials' Adoption of Try-on Technology

According to the past investigation, the growth rate of the online apparel and fashion retail sector exhibits a relatively slower pace when compared to other sectors, such

as retailers specializing in sporting equipment and technology (Moroz, 2019; Pachoulakis & Kapetanakis, 2012). The primary objective of this research was to analyze and ascertain the design and individual attributes that impact the adoption of virtual try-on systems among millennials. This model was subjected to empirical validation using data obtained from 315 participants.

The primary findings of the structural equation modeling analysis provided substantial support for the significant influence of "optimism" and "innovativeness" on performance expectancy and price value. The results of this study offer valuable understandings for e-commerce businesses seeking to effectively engage with their millennial clientele and encourage their acceptance of try-on technology (Qasem, 2021).

### 2.8. Optimism Positively Influences the Performance Expectancy of Try-on Technology in the Fashion industry

According to Venkatesh et al. (2003), effort expectancy pertains to the level of ease that users perceive in utilizing a system. According to Pham et al. (2018), optimism plays a significant role in shaping individuals' perceptions of technology concerning its ease of use. In their study, Jeong and Ha (2020) found a significant correlation between optimism and the perceived ease of use of retail service robots, influencing individuals' intention to use such robots. Optimistic individuals, who believe in acquiring new skills quickly, are more inclined to perceive try-on technology as controllable and novel due to its advanced nature. Consequently, customers with a sufficient level of optimism are more inclined to perceive try-on technology as user-friendly and anticipate reduced effort in utilizing said technology.

**Table 2:** Prior Literature Review on the Topic

Key Theme	Literature Flow	Resources
- Furthermore, virtual reality's impact on fashion distribution extends beyond singular transactions, facilitating the emergence of novel collaborations and partnerships within the industry.	- How the fashion industry can utilize virtual reality distribution channels to their maximum capacity while minimizing potential disadvantages.	Kim (2021), Jang (2023), Jang (2023), Hwang and Lee (2017), King et al. (2019), Ricci et al. (2023). Moes and Van Vliet (2017), Lombart et al. (2020), Ricci et al. (2023), Javornik (2016), McCormick et al. (2014), Boardman et al. (2020), Han et al. (2022), Chen (2003), Tandon et al. (2017), Moroz (2019), Pachoulakis and Kapetanakis (2012), Qasem (2021). Venkatesh et al. (2003), Pham et al. (2018), Jeong and Ha (2020)

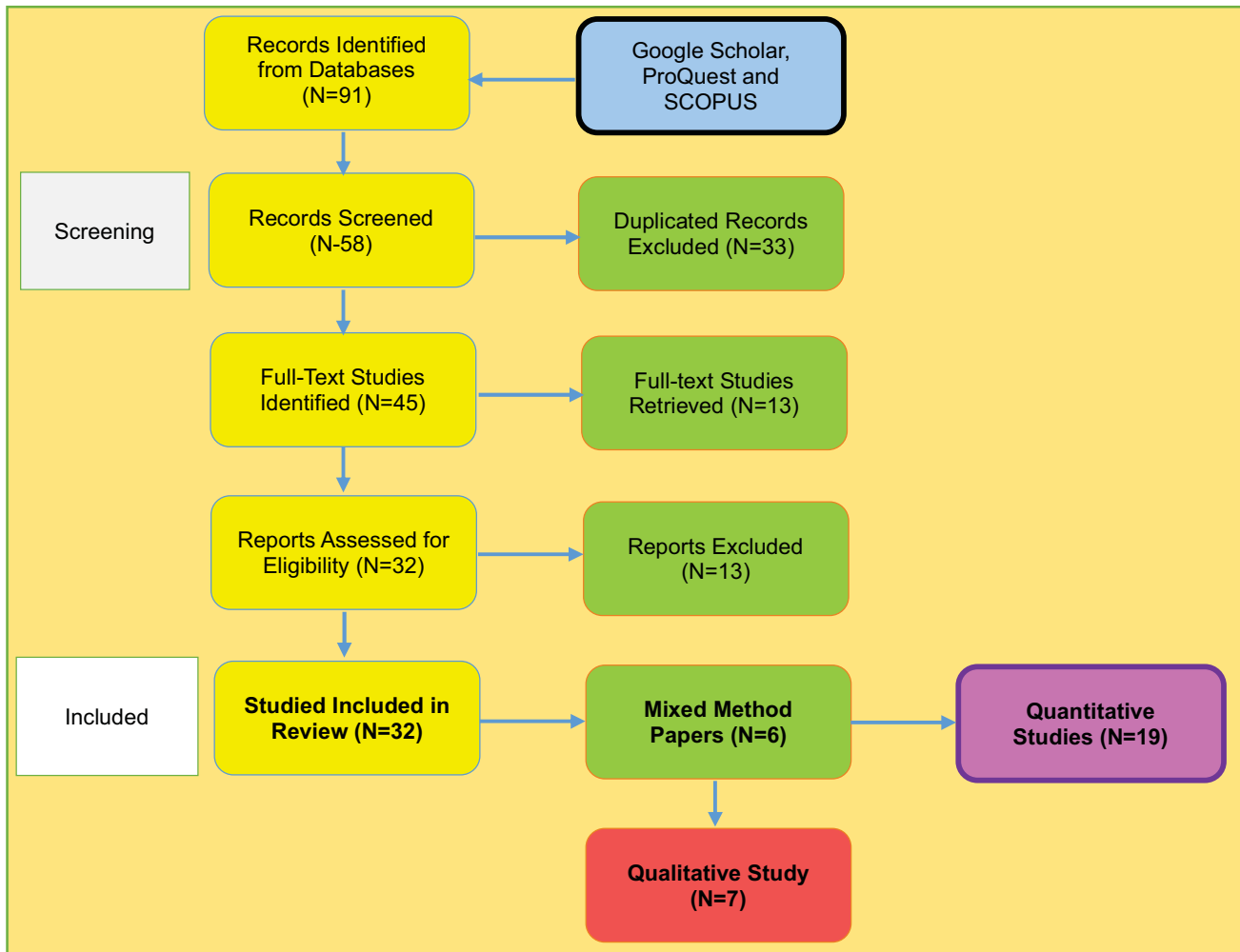
## 3. Study Design

The literature search is an essential element of a methodical review. The literature search plays a vital role in a systematic evaluation as it informs the results and is the foundational process for identifying and gathering the data that will be analyzed. Therefore, it is imperative to design the literature search in a rigorous and replicable manner to mitigate the potential for bias. In their study, Sampson et al. (2008) identified that among the eleven tools devised to facilitate the effective reporting of literature searches by authors, a solitary item was found to be present in all of the abovementioned instruments.

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement (Rethlefsen et al., 2021) is the predominant reporting guidance utilized for systematic reviews, explicitly addressing the literature search aspect. The approach used to gather previous studies to support the findings presented in Chapter 4 adheres to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology. This method is widely acknowledged and recommended for its systematic and transparent approach to searching and selecting relevant literature (Page et al., 2021). A systematic search was conducted across electronic databases, academic journals, conference proceedings, and reputable online repositories to comprehensively cover the existing literature.

The screening process was initiated by employing My Bib citation management software to eliminate duplicate studies. Subsequently, the studies' titles and abstracts were evaluated to determine their initial relevance. Articles were excluded when they did not align with the research focus or failed to meet the predefined inclusion criteria. Following that, a thorough examination was conducted of the complete texts of the remaining studies in order to determine their appropriateness for the analysis. During this phase, significant emphasis was placed on meticulously, considering the research design, methodologies employed, and the pertinence of the obtained findings (Wang et al., 2019). Studies that needed more information or did not undergo peer review were excluded from consideration to ensure the dependability and legitimacy of the selected resources (Kang, 2021; Phommahaxay, 2019; Kang & Kim, 2023).

In order to uphold the standards of rigor and mitigate the possibility of biases, the screening and selection procedures were carried out by two researchers who worked independently of each other. Any inconsistencies in the selection of studies were resolved through deliberations and reaching a consensus. The study selection process was visually represented using the PRISMA flow diagram, which depicted the number of studies recognized, screened,



**Figure 2:** The Procedure of Data Extract (PRISMA)

and finally included for the systematic review. By applying the PRISMA approach, this methodology guarantees the systematic, transparent, and comprehensive gathering of previous studies about the attributes of fashion distribution channels in virtual reality. Implementing rigorous screening and selection procedures ensures the reliability and credibility of the literature utilized to substantiate and validate the findings expounded upon in the next section.

## 4. Results

### 4.1. The Enhanced Consumer Engagement

The emergence of the COVID-19 pandemic in 2020 led to the widespread adoption of remote work and virtual socialization. In order to appeal to consumers, enterprises

have embraced virtual reality (VR) as an encouraging technological tool capable of generating deeply immersive and multisensory customer experiences (de Regt et al., 2021). According to Wei et al. (2019), virtual reality (VR) can enhance user engagement by providing a wide range of content and optimizing the degree of immersion, existence, and fulfillment by delivering realistic and vivid information. Virtual reality (VR) is employed in different retail settings as a purchasing tool to efficiently communicate product information through visually captivating visuals and immersive prompts. Moreover, virtual reality (VR) is a cutting-edge platform that stimulates consumers' imagination by providing sensory information. Exposure to such content is anticipated to enhance consumers' curiosity and promote innovative thinking by augmenting sensory experiences (Lin et al., 2020; Cavallaro et al., 2021).



## **4.2. VR Media as a New Shopping Tool that Influence Consumer Creativity**

Consumer creativity plays a crucial role in the contemporary market landscape. Researchers have found that marketers actively engage consumers in designing and innovating new products. Additionally, marketers utilize the ideas and outputs generated by consumers in online marketing programs (Wu & Kim, 2022).

Fashion retailers required to introduce new products and services on a seasonal basis find highly creative consumers appealing and advantageous. In the meantime, individuals partake in innovative endeavors to fulfill their desires and address issues about consumption. Individuals also discover avenues to personalize their products and experiences. Moreover, it is anticipated that technological advancements will further enhance this inclination. Consumers who assume the role of co-producers tend to deviate from the prescribed instructions provided by manufacturers, engaging in novel and imaginative practices to use products (Kang, 2020).

Virtual reality provides an unprecedented degree of consumer engagement within fashion distribution channels. The dynamic and personalized way consumers can explore products is facilitated by the immersive and interactive nature of virtual reality (VR) experiences. The heightened level of engagement in individuals amplifies emotional connections with brands and products, cultivating brand loyalty and encouraging repeated purchases. It is recommended that fashion companies allocate resources toward developing immersive and engaging virtual reality (VR) experiences as a strategic approach to enhance customer attraction and retention. Companies can enhance brand-consumer relationships and foster customer loyalty by offering a seamless and enjoyable virtual shopping experience (Pantano et al., 2017; Kim & Choo, 2023).

## **4.3. Personalization and Customization Opportunities**

Utilizing virtual reality (VR) enables consumers to engage in a comprehensive and immersive experience augmented by technology, allowing direct interaction with products and services. The current body of literature indicates a notable increase in the association between virtual reality (VR) and marketing-related matters (Wu et al., 2021; Qushem et al., 2021). Furthermore, there is a discernible surge in scholarly attention toward using VR technology in marketing. However, there is a need for improvement in the existing theoretical framework concerning how consumers engage with and exert influence on VR communications. Virtual reality (VR) is widely recognized as the prevailing consumer technology on a global scale due to its dominant presence in technology-

mediated consumer experiences (González-Rodríguez et al., 2020). Utilizing virtual reality technology facilitates enhanced opportunities for personalization and customization in the realm of consumer experiences. By utilizing augmented reality (AR) and three-dimensional (3D) modeling technologies, consumers can visually perceive clothing items in various styles, colors, and sizes, thereby customizing their selections based on individual preferences. The implementation of a high degree of customization not only serves to enhance the overall shopping experience but also contributes to a reduction in product returns, thereby resulting in heightened levels of operational efficiency and sustainability (Han, 2022).

## **4.4. Aiding with Personalized Engagement Marketing**

The utilization of immersive technology has the potential to improve the effectiveness of the customer experience, ensuring continuous access to up-to-date information and materials. Customers are poised to embark on a novel experience wherein virtual reality is employed as a mechanism for effectively navigating and streamlining an abundance of choices and information in a customized manner (Kumar et al., 2019). Fashion companies should consider incorporating virtual try-on features and interactive design tools within their virtual reality (VR) platforms (Lau & Lee, 2019; Pantano et al., 2017). By providing customized product choices, organizations can accommodate a wide range of customer preferences, thereby diminishing the probability of product returns and attaining elevated levels of customer satisfaction (Kang, 2020).

## **4.5. Global Reach and Accessibility**

Utilizing virtual reality in fashion distribution channels transcends the limitations of physical locations, thereby enabling widespread accessibility to a diverse global audience. Virtual fashion shows and exhibitions allow designers to present their creations globally, facilitating cross-cultural interactions and extending their market reach (Xi & Hamari, 2021; Chu & Choi, 2011). By integrating immersive technology experiences with social media platforms and facilitating sharing of these experiences among friends and family, businesses can cultivate relationships with their current customer base while attracting new customers (Griffin, 2023). It has been found that conventional forms of content, such as photographs, are inadequate in effectively engaging the followers of luxury brands on social media platforms like WeChat (Haenlein et al., 2020). On the contrary, active and interactive content has been found to enhance the probability of customers engaging in marketing communications.

#### 4.6. Enhancing Customer Loyalty

Scholarly research has demonstrated that consumers exhibit behavior that closely resembles that of individuals who engage in shopping activities within brick-and-mortar establishments, owing to the heightened authenticity offered by virtual stores. Previous studies have investigated consumers' responses to virtual reality (VR) experiences in the context of brand attitudes, product familiarity, purchase intentions, and virtual purchasing behavior (Yan et al., 2022; Meißner et al., 2020; Bae et al., 2020). Virtual reality has become a potent tool for marketing and achieving various business objectives, with premium enterprises actively adopting this technology. Fashion companies should consider utilizing virtual reality (VR) technology to organize virtual fashion events that a worldwide audience can access (Jin et al., 2021). By adopting a strategy of inclusivity and embracing cultural diversity, companies have the potential to enhance their global presence and access burgeoning markets.

#### 4.7. Data-Driven Decision Making

According to Gonzalez et al. (2005), dynamic decision-making tasks refer to interconnected decisions within a setting. According to Edwards (1962), the environment experiences alterations due to the sequence of decisions made, irrespective of whether the sequence is independent or bidirectional. According to Jenkins et al. (2011), preserving safety, accuracy, and efficiency in intricate and ever-changing systems is heavily contingent upon the capacity to render decisions that possess precision and logical consistency. Decision-making is commonly connected to an individual's expertise and competencies within a particular domain, along with their repertoire of rule-based heuristics and conditional processes. (Rao et al., 2022).

#### 4.8. Natural and Real-Time Interaction

In order to address consumer apprehensions, cosmetic companies such as MAC and Sephora have implemented augmented reality (AR) technology, enabling clients to virtually test products before making a procurement decision. The application of virtual reality (VR) as a means for data visualization offers users an exceptional ability to relate with virtual data models (El Beheiry et al., 2019), thus allowing real-time data manipulation. Implementing this specific form of interactive data visualization enhances decision-making by giving users a visual representation of data storage and utilization. Fashion companies can use this data to make data-driven decisions, enhance their marketing strategies (Bai et al., 2022), optimize their product offerings,

and deliver personalized recommendations. Fashion enterprises should integrate data analytics tools into their operational processes to extract valuable insights from the data generated through virtual reality (VR) technology (De Silva et al., 2019). By acquiring knowledge about consumer behavior and preferences, organizations can make informed decisions, identify market trends, and tailor their strategies effectively to meet customer demands (Alam & Hossain, 2021).

**Table 2:** Final Selected Dataset (Total 32 Resources)

Main Factors	Number of Questions
The Enhanced Consumer Engagement	de Regt et al. (2021), Wei et al. (2019). Lin et al. (2020), Cavallaro et al. (2021)
VR Media as a New Shopping Tool that Influence Consumer Creativity	Wu and Kim (2022). Kang (2020), Pantano et al. (2017), Kim and Choo (2023)
Personalization and Customization Opportunities	Wu et al. (2021), Qushem et al. (2021), González-Rodríguez et al. (2020), Han (2022)
Aiding with Personalized Engagement Marketing	Kumar et al. (2019), Lau and Lee (2019), Pantano et al. (2017), Kang (2020)
Global Reach and Accessibility	Xi and Hamari (2021), Chu and Choi (2011), Griffin (2023), Haenlein et al. (2020)
Enhancing Customer Loyalty	Yan et al. (2022), Meißner et al. (2020), Bae et al. (2020), Jin et al. (2021)
Data-Driven Decision Making	Gonzalez et al. (2005), Edwards (1962), Jenkins et al. (2011), Rao et al. (2022)
Natural and Real-Time Interaction	El Beheiry et al. (2019), Bai et al. (2022), De Silva et al. (2019), Alam and Hossain (2021)

### 5. Discussions

The growing utilization of virtual reality in the fashion industry is a new phenomenon that has resulted in the scarcity of research, scholarly literature, and academic journals. As a result, the findings made in this paper may have been made on a more concentrated point which may have led to overlooking underlying nuances and complexities.

The domain of virtual reality technology is widely recognized for its continuous and swift advancements. During the study, updated versions of virtual reality (VR) hardware and software, along with improved interfaces and enhanced functionalities, may have been introduced. The advancements mentioned above can impact the characteristics of fashion distribution channels within the virtual reality domain, thereby reducing the significance or potentially rendering specific findings outdated.

Assembling a varied and inclusive cohort of individuals who engage with virtual reality technology and consume fashion poses specific difficulties. The participants involved in the study may display unique characteristics or preferences that differ significantly from those of the broader population, thus potentially introducing a selection bias. For instance, the sample could be predominantly composed of early adopters of virtual reality (VR) technology or individuals with a pronounced inclination toward fashion. The potential outcome of this situation could lead to conclusions influenced by bias.

The process of gathering data within virtual reality environments poses distinct challenges in terms of guaranteeing both validity and reliability. The range of user interactions and experiences in virtual environments can be attributed to various factors, such as individual preferences, prior experiences, and novelty. Incorporating subjective elements during the data collection can introduce inaccuracies or biases, thereby impacting the overall precision of the research outcomes.

The utilization of virtual reality environments for research purposes gives rise to ethical considerations, specifically pertaining to the protection of data privacy, the acquisition of informed consent, and the potential risks that participants may encounter. Virtual reality (VR) encounters have the capacity to elicit intense emotional responses and potentially elicit physical discomfort or motion sickness in certain individuals.

The emergence of virtual reality has demonstrated its significant impact in fundamentally transforming how fashion is distributed, experienced, and obtained. The potential for innovation, engagement, and sustainability within the fashion industry is underscored by the implications arising from the four primary attributes of fashion distribution channels in virtual reality. The application of immersive virtual experiences holds promise in cultivating deeper connections between fashion brands and consumers, leading to heightened consumer engagement. Consequently, this phenomenon has the potential to foster a sense of allegiance toward the brand, thereby facilitating the expansion of the enterprise. Virtual reality offers numerous opportunities for personalization and customization, catering to individual preferences while addressing environmental concerns through reduced product returns and waste (Woo & Kang, 2020).

The global reach and accessibility of modern technology enhance the capacity of fashion companies to expand their market presence. This facilitates their participation in intercultural interactions and allows them to serve a wide range of customers with different backgrounds. In addition, the substantial quantities of data generated through virtual reality experiences empower fashion enterprises to make data-driven decisions, enhancing marketing strategies and

delivering tailored recommendations. However, it is crucial to recognize specific limitations when examining virtual reality's significant influence on fashion distribution. The limits of this study include a paucity of existing literature on the topic, the ever-changing landscape of technological advancements, potential biases in sample selection, concerns regarding data reliability, and ethical considerations inherent in the field of research. In light of future advancements, fashion enterprises must demonstrate adaptability, embrace technological advancements, and stay attuned to changing consumer preferences. The successful incorporation of virtual reality technology into distribution channels necessitates a careful equilibrium between inventive advancements and ethical deliberations, placing significant emphasis on safeguarding data, obtaining informed consent, and upholding privacy.

Prior studies (Orús et al., 2021; Muresan et al., 2021) have indicated that socio-demographic factors, such as age and educational attainment, can impact individuals' attitudes and perceptions toward extended reality (XR) experiences. Therefore, it is recommended that future research endeavors employ studies utilizing representative samples, employing probabilistic sampling methods. Additionally, a more comprehensive range of ages and profiles should be included to facilitate comparisons of these findings across diverse individuals and enhance the results' generalizability. In order to improve the data validity and reliability of future studies, the researcher could have employed standardized measurement instruments and validated questionnaires to collect user feedback and perceptions. Furthermore, using qualitative research methodologies, such as conducting interviews or organizing focus groups, can yield a more profound understanding of participants' experiences and contribute to the validation of quantitative results. Ultimately, the study's scope may have been constrained by the limited availability of literature, resulting in a more focused analysis of some aspects while potentially disregarding potential intricacies and nuances. In order to address this constraint, the researcher could have augmented the literature review by incorporating relevant studies from adjacent disciplines, such as the application of virtual reality in various sectors or the distribution channels of fashion in conventional contexts.

Integrating virtual reality technology in fashion distribution allows industry professionals to develop a sector that prioritizes improved environmental sustainability, fairness, and customer-centric approaches. Fashion companies can successfully cater to the needs of technologically adept consumers and generate significant shopping experiences by implementing diverse strategies. The abovementioned strategies encompass enhancing consumer engagement, customizing offerings, guaranteeing global accessibility, and implementing data-driven decision-



making. Due to the digital revolution, the fashion industry is undergoing significant changes in its virtual reality distribution channels. The modified attributes offer a diverse array of potential opportunities and choices. By effectively leveraging these opportunities and surmounting challenges, the fashion industry possesses the capacity to embark on a transformative trajectory. Virtual reality is pivotal in this trajectory, propelling the fashion industry into an era of exceptional innovation and extensive growth.

## References

- Alam, M. S., & Hossain, D. M. (2021). Management Accounting in the Era of Digitalization. *The Journal of Industrial Distribution & Business*, 12(11), 1-8.
- Bae, S., Jung, T. H., Moorhouse, N., Suh, M., & Kwon, O. (2020). The influence of mixed reality on satisfaction and brand loyalty in cultural heritage attractions: A brand equity perspective. *Sustainability*, 12(7), 2956.
- Bai, H., McColl, J., & Moore, C. (2022). Luxury fashion retailers' localised marketing strategies in practice—evidence from China. *International Marketing Review*, 39(2), 352-370.
- Bertot, J. C., Jaeger, P. T., & Hansen, D. (2012). The impact of polices on government social media usage: Issues, challenges, and recommendations. *Government information quarterly*, 29(1), 30-40.
- Boardman, R., Henninger, C. E., & Zhu, A. (2020). Augmented reality and virtual reality: new drivers for fashion retail?. *Technology-Driven Sustainability: Innovation in the Fashion Supply Chain*, 155-172.
- Cavallaro, S., Grandi, F., Peruzzini, M., & De Canio, F. (2021). Virtual Tours to Promote the Remote Customer Experience. *Advances in Transdisciplinary Engineering*, 16, 477-486.
- Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM): People, process and technology. *Business process management journal*, 9(5), 672-688.
- Chu, S. C., & Choi, S. M. (2011). Electronic word-of-mouth in social networking sites: A cross-cultural study of the United States and China. *Journal of Global Marketing*, 24(3), 263-281.
- de Regt, A., Plangger, K., & Barnes, S. J. (2021). Virtual reality marketing and customer advocacy: Transforming experiences from story-telling to story-doing. *Journal of Business Research*, 136(November), 513-522.
- De Silva, R. K. J., Rupasinghe, T. D., & Apeageyi, P. (2019). A collaborative apparel new product development process model using virtual reality and augmented reality technologies as enablers. *International Journal of Fashion Design, Technology and Education*, 12(1), 1-11.
- Edwards, W. (1962). Dynamic decision theory and probabilistic information processing. *Human factors*, 4(2), 59-74.
- Gonzalez, C., Vanyukov, P., & Martin, M. K. (2005). The use of microworlds to study dynamic decision making. *Computers in human behavior*, 21(2), 273-286.
- González-Rodríguez, M. R., Díaz-Fernández, M. C., & Pino-Mejías, M. A. (2020). The impact of virtual reality technology on tourists' experience: a textual data analysis. *Soft Computing*, 24(18), 13879-13892.
- Griffin, T., Guttentag, D., Lee, S. H., Giberson, J., & Dimanche, F. (2023). Is VR always better for destination marketing? Comparing different media and styles. *Journal of Vacation Marketing*, 29(1), 119-140.
- Haenlein, M., Anadol, E., Farnsworth, T., Hugo, H., Hunichen, J., & Welte, D. (2020). Navigating the New Era of Influencer Marketing: How to be Successful on Instagram, TikTok, & Co. *California management review*, 63(1), 5-25.
- Han, D. I. D., Bergs, Y., & Moorhouse, N. (2022). Virtual reality consumer experience escapes: preparing for the metaverse. *Virtual Reality*, 26(4), 1443-1458.
- Han, J. I. (2022). The Role of Visual Communication for Emotional Marketing Strategy. *The Journal of Industrial Distribution & Business*, 13(11), 39-46.
- Hwang, Y. M., & Lee, K. C. (2017). Using eye tracking to explore consumers' visual behavior according to their shopping motivation in mobile environments. *Cyberpsychology, Behavior, and Social Networking*, 20(7), 442-447.
- Jang, J. Y. (2023). Analyzing visual behavior of consumers in a virtual reality fashion store using eye tracking. *Fashion and Textiles*, 10(1), 24.
- Javornik, A. (2016). Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. *Journal of Retailing and Consumer Services*, 30(May), 252-261.
- Jenkins, D. P., Stanton, N. A., Salmon, P. M., & Walker, G. H. (2011). A formative approach to developing synthetic environment fidelity requirements for decision-making training. *Applied Ergonomics*, 42(5), 757-769.
- Jeong, S. W., & Ha, S. (2020). Consumer acceptance of retail service robots. *The Research Journal of the Costume Culture*, 28(4), 409-419.
- Jin, B., Kim, G., Moore, M., & Rothenberg, L. (2021). Consumer store experience through virtual reality: its effect on emotional states and perceived store attractiveness. *Fashion and Textiles*, 8(19), 1-21.
- Kim, J. (2021). Advertising in the metaverse: Research agenda. *Journal of Interactive Advertising*, 21(3), 141-144.
- Jang, J. Y. (2023). Analyzing visual behavior of consumers in a virtual reality fashion store using eye tracking. *Fashion and Textiles*, 10(1), 24.
- Jung, J., Yu, J., Seo, Y., & Ko, E. (2021). Consumer experiences of virtual reality: Insights from VR luxury brand fashion shows. *Journal of Business Research*, 130(June), 517-524.
- Kang, E. (2020). The relationship between reinforcement of employee's customer-centric behavior and employee motivation factors. *Advances in Social Sciences Research Journal*, 7(7), 338-347.
- Kang, E. (2021). Qualitative content approach: Impact of organizational climate on employee capability. *East Asian Journal of Business Economics*, 9(4), 57-67.
- Kang, E., & Kim, J. (2023) Secondary Literature Analysis: The Marketing Practice to Attract Potential Customers into Leisure and Sports Industry. *The Journal of Industrial Distribution & Business*, 14(6), 1-8.

- Kim, J., & Ha, J. (2021). User experience in VR fashion product shopping: focusing on tangible interactions. *Applied Sciences*, *11*(13), 6170.
- Kim, W. B., & Choo, H. J. (2023). How virtual reality shopping experience enhances consumer creativity: The mediating role of perceptual curiosity. *Journal of Business Research*, *154*(January), 113378.
- King, A. J., Bol, N., Cummins, R. G., & John, K. K. (2019). Improving visual behavior research in communication science: An overview, review, and reporting recommendations for eye-tracking methods. *Communication Methods and Measures*, *13*(3), 149–177.
- Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. *California Management Review*, *61*(4), 135-155.
- Lau, K. W., & Lee, P. Y. (2019). Shopping in virtual reality: a study on consumers' shopping experience in a stereoscopic virtual reality. *Virtual Reality*, *23*(3), 255-268.
- Lombart, C., Millan, E., Normand, J. M., Verhulst, A., Labbé-Pinlon, B., & Moreau, G. (2020). Effects of physical, non-immersive virtual, and immersive virtual store environments on consumers' perceptions and purchase behavior. *Computers in Human Behavior*, *110*, 106374.
- Lin, L. P. L., Huang, S. C. L., & Ho, Y. C. (2020). Could virtual reality effectively market slow travel in a heritage destination?. *Tourism Management*, *78* (June), 104027.
- McCormick, H., Cartwright, J., Perry, P., Barnes, L., Lynch, S., & Ball, G. (2014). Fashion retailing—past, present and future. *Textile Progress*, *46*(3), 227-321.
- Meißner, M., Pfeiffer, J., Peukert, C., Dietrich, H., & Pfeiffer, T. (2020). How virtual reality affects consumer choice. *Journal of Business Research*, *117*(September), 219-231.
- Moes, A., & van Vliet, H. (2017). The online appeal of the physical shop: How a physical store can benefit from a virtual representation. *Heliyon*, *3*(6), e00336.
- Moroz, M. (2019). Tendency to use the virtual fitting room in generation Results of a qualitative study. *Foundations of Management*, *11*(1), 239–254.
- Muresan, I. C., Harun, R., Arion, F. H., Fatah, A. O., & Dumitras, D. E. (2021). Exploring residents' perceptions of the socio-cultural benefits of tourism development in the mountain area. *Societies*, *11*(3), 83.
- Pachoulakis, I., & Kapetanakis, K. (2012). Augmented reality platforms for virtual fitting rooms. *The International Journal of Multimedia & Its Applications*, *4*(4), 35-46.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International journal of surgery*, *88*, 105906.
- Pantano, E., Rese, A., & Baier, D. (2017). Enhancing the online decision-making process by using augmented reality: A two country comparison of youth markets. *Journal of Retailing and Consumer Services*, *38*(September), 81-95.
- Pham, L., Nguyen, P. T. H., & Luse, D. (2018). Technology readiness and customer satisfaction in luxury hotels: A Vietnam case study. *International Journal of Entrepreneurship*, *22*(2), 1-23.
- Phommahaxay, S., Kamnuansipla, P., Draper, J., Nantharath, P., & Kang, E. (2019). Preparedness of Lao People's Democratic Republic to Implement ASEAN Common Visa (ACV). *Research in World Economy*, *10*(3), 419-430.
- Qasem, Z. (2021). The effect of positive TRI traits on millennials adoption of try-on technology in the context of E-fashion retailing. *International Journal of Information Management*, *56*(February), 102254.
- Orús, C., Ibáñez-Sánchez, S., & Flavián, C. (2021). Enhancing the customer experience with virtual and augmented reality: The impact of content and device type. *International Journal of Hospitality Management*, *98*(September), 103019.
- Qusheh, U. B., Christopoulos, A., Oyelere, S. S., Ogata, H., & Laakso, M. J. (2021). Multimodal technologies in precision education: Providing new opportunities or adding more challenges?. *Education sciences*, *11*(7), 338.
- Rao, A. K., Chandra, S., & Dutt, V. (2022). Learning from feedback: Evaluation of dynamic decision-making in virtual reality under various repetitive training frameworks. *Frontiers in Psychology*, *13*, 872061.
- Rethlefsen, M. L., Farrell, A. M., Trzasko, L. C. O., & Brigham, T. J. (2015). Librarian co-authors correlated with higher quality reported search strategies in general internal medicine systematic reviews. *Journal of clinical epidemiology*, *68*(6), 617-626.
- Ricci, M., Evangelista, A., Di Roma, A., & Fiorentino, M. (2023). Immersive and desktop virtual reality in virtual fashion stores: a comparison between shopping experiences. *Virtual Reality*, 1-16.
- Sampson, M., McGowan, J., Tetzlaff, J., Cogo, E., & Moher, D. (2008). No consensus exists on search reporting methods for systematic reviews. *Journal of Clinical Epidemiology*, *61*(8), 748-754.
- Tandon, U., Kiran, R., & Sah, A. N. (2017). Customer satisfaction as mediator between website service quality and repurchase intention: An emerging economy case. *Service Science*, *9*(2), 106-120.
- Telukdarie, A., Munsamy, M., & Mohlala, P. (2020). Analysis of the Impact of COVID-19 on the Food and Beverages Manufacturing Sector. *Sustainability*, *12*(22), 9331.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425-478.
- Wang, X., Chen, Y., Liu, Y., Yao, L., Estill, J., Bian, Z., ... & Yang, K. (2019). Reporting items for systematic reviews and meta-analyses of acupuncture: the PRISMA for acupuncture checklist. *BMC complementary and alternative medicine*, *19*, 1-10.
- Wei, W., Qi, R., & Zhang, L. (2019). Effects of virtual reality on theme park visitors' experience and behaviors: A presence perspective. *Tourism Management*, *71* (April), 282-293.
- Xi, N., & Hamari, J. (2021). Shopping in virtual reality: A literature review and future agenda. *Journal of Business Research*, *134*(September), 37-58.
- Yan, J., Ali, I., Ali, R., & Chang, Y. (2022). The power of affection: exploring the key drivers of customer loyalty in virtual reality-enabled services. *Frontiers in Psychology*, *13*, 850896.

- Woo, E. J., & Kang, E. (2020). Environmental issues as an indispensable aspect of sustainable leadership. *Sustainability*, 12(17), 7014.
- Wu, Y. F., & Kim, E. Y. (2022). Users' Perceptions of Technological Features in Augmented Reality (AR) and Virtual Reality (VR) in Fashion Retailing: A Qualitative Content Analysis. *Mobile Information Systems*, 2022, 3080280.
- Wu, J., Song, S., & Whang, C. H. (2021). Personalizing 3D virtual fashion stores: Exploring modularity with a typology of atmospherics based on user input. *Information & Management*, 58(4), 103461.