

DIGITISATION IN FASHION INDUSTRY

A FADING TREND OR LASTING FUTURE?

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FIGURE 1

ACKNOWLEDGEMENTS/ DEDICATION

I consider myself really fortunate to have had the opportunity to study my master's at Leeds Arts University in the UK and for that I am incredibly grateful to my family for their support. This dissertation is a reflection of all the amazing help I've gotten. Their constant encouragement and belief have been my pillar and I am forever thankful for it. Special thanks go out to my course supervisor, Deidre for her valuable guidance and to Dr. Sarah Taylor for her insightful thoughts. I also thank Jo and Frances for sharing their knowledge which has greatly advanced my personal and professional growth. Their advice has been really helpful to me in my career and I am grateful for it.



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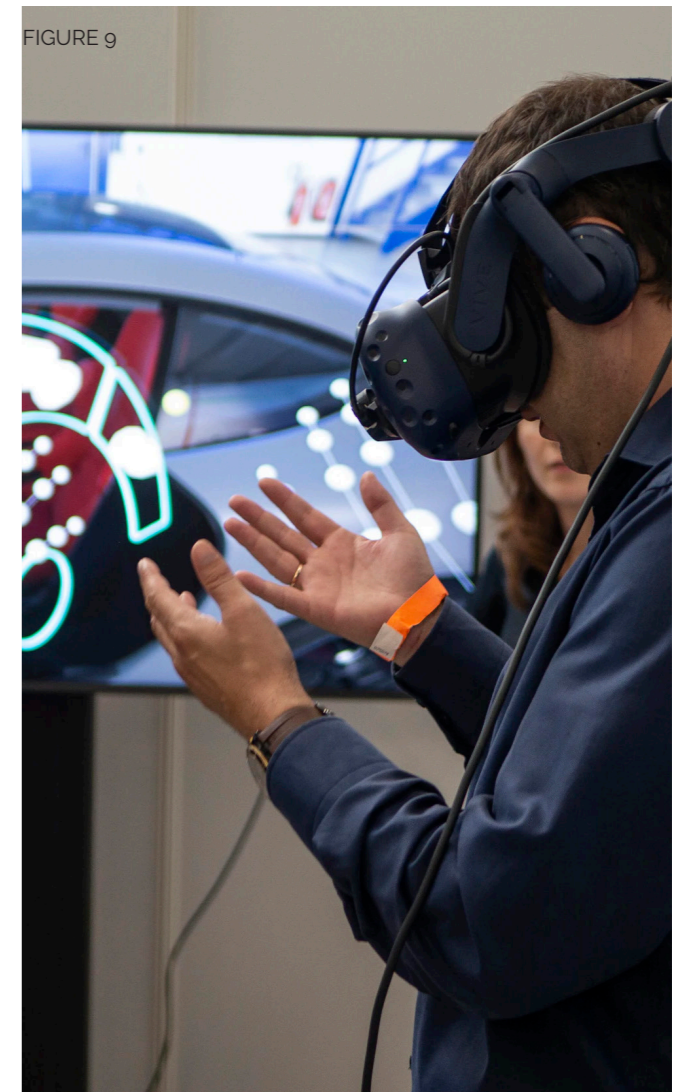
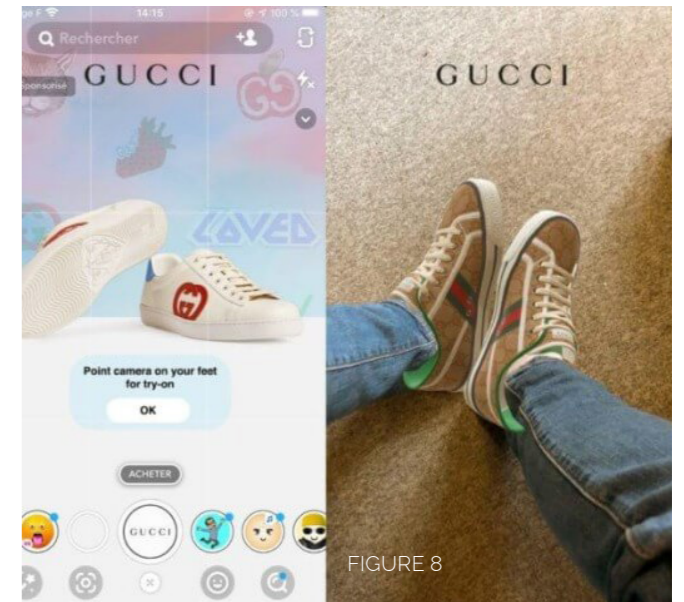


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ABSTRACT

This dissertation delves into the digitisation of the fashion industry, a transformative movement characterised by the integration of digital technologies across design, production, marketing and retail. Through a comprehensive examination it unveils the mixed implications of this digital revolution highlighting both the opportunities for innovation and the challenges posed to traditional practices. Digitisation democratises fashion enabling a broader participation and fostering a deeper consumer engagement through e-commerce platforms, social media and personalised digital experiences. Moreover, the adoption of technologies such as artificial intelligence, augmented and virtual reality and blockchain introduce efficiencies and sustainability into fashion practices suggesting a future where fashion not only embraces digital innovation but also aligns with ethical and environmental considerations. However, this dissertation critically acknowledges the potential drawbacks of digitisation, including the risk of exacerbating the digital divide and the challenges of maintaining the tactile essence of fashion in a digital world. Despite these challenges, the dissertation argues that digitisation is inevitably the future of fashion presenting a compelling vision of an industry that balances technological advancement with sustainability, inclusivity and creative integrity. It calls for a collaborative effort among designers, brands, consumers and educators to navigate this digital transformation ensuring that the future of fashion is both innovative and responsible.



INTRODUCTION

The vibrant and ever-changing fashion industry is about to undergo a revolution never seen before thanks to the digital era. This transformation, driven by the swift currents of digitisation, which has begun to redefine the essence of fashion. From creation and manufacturing to the distribution and utilisation, the integration of digital technology into the physical realm of fashion is a significant milestone in the industry's long and rich history. This development has led to a reassessment of traditional approaches and has created opportunities for advancements in areas such as innovation, sustainability and interaction. This dissertation sets forth on an explorative journey to dissect the complexities, challenges and opportunities presented by digitisation in the fashion sector, aiming to offer an in-depth understanding of its influence on the future course of the industry. The global fashion industry symbolising cultural expression and wealth, has always functioned as a reflection of societal trends and technical progress. Rooted in centuries-old craftsmanship and artistry, the industry has navigated through the waves of industrialisation and globalisation, now situated in the centre of the digital revolution. The emergence and broad use of digital technology, accelerated by the widespread acceptance of the internet, have sparked a process

of significant change. This process touches every facet of the fashion ecosystem, reshaping how brands conceptualise design, manufacture products, engage with consumers and navigate the complex web of global distribution and retail. In the present era of digitalisation, fashion businesses regardless of their size or history face a critical point where adopting digital innovation goes beyond being optional and becomes necessary for their survival and expansion. Digitisation in the fashion industry not only improves operations and expands market reach but also brings about a substantial transformation in the creative process. It encourages equal access and involvement in the fashion business making it more inclusive and varied. Digital platforms promote novel forms of collaboration allowing designers to

transcend geographical limitations and engage with a global community. Additionally, the digitisation movement drives the fashion industry towards addressing its environmental footprint. Through innovative tools and platforms brands can now adopt practices that promote resource efficiency, reduce waste and ensure greater transparency across the supply chain. Despite these advancements the process of transitioning to digital transformation is full of obstacles such as worries about weakening the brand, vulnerabilities in cybersecurity and the possible erosion of the physical consumer experience that is essential to the allure of fashion. This dissertation attempts to unravel the mixed outcomes of digitisation within the fashion industry. It seeks to inspect how digital technologies are

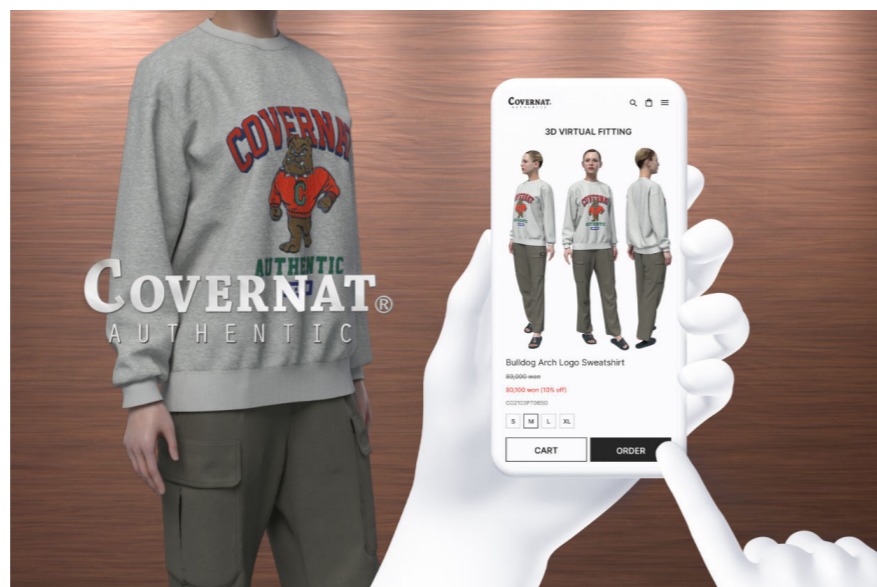


FIGURE 11



FIGURE 12

being woven into the fabric of fashion business models, assess their influence on consumer behaviour and market dynamics and measure their capacity to drive forward innovation and sustainability. A central research question guides this exploration: does digitisation represent a fleeting trend or signify a definitive shift towards the future of fashion? In an age where digital innovation intersects with fashion, this dissertation delves into the transformative impact of digitisation on the

industry. Through case studies on Balenciaga's virtual reality shows, Lululemon's integration of mirror, and the digital fashion initiatives of DressX and Snapchat, alongside a comprehensive literature review, this research uncovers how digitisation is redefining creative expression, consumer interaction and sustainability in fashion. These examples illuminate the depth of digital integration, suggesting that digitisation is not a fleeting trend but a pivotal shift towards the future. The integration of case studies and research

insights indicates a new era of technological symbiosis in the fashion industry by revealing digitisation as the driving force behind the industry's progress. This dissertation aims to provide detailed insights into the factors influencing the fashion industry's transition into the digital realm. The study examines the relationship between technology and fashion and highlights how digital innovation may contribute to a more sustainable, inclusive, and creatively active fashion business.

CHAPTER ONE

CHAPTER INTRODUCTION



FIGURE 13

The fashion industry at the nexus of tradition and progress struggles with digitisation's tide, a transformative force reshaping its landscape. This chapter delves into digitisation's mixed impact on fashion tracing its evolution and examining its profound effects. It highlights key technological milestones that ushered in a new era reshaping design, production and retail. The analysis reveals digitisation's dual nature offering unparalleled opportunities for emerging brands while presenting formidable challenges. Digital innovations have redefined consumer engagement, enhancing brand interaction and promoting sustainable and ethical practices. Moreover, digitisation champions diversity and inclusivity providing a platform for broader representation. The emergence of digital fashion shows exemplifies digitisation's creative potential revolutionising presentation methods and audience connection. Amidst these shifts, this exploration assesses whether digitisation is a fleeting trend or fashion's future, aiming to contribute to the discourse on fashion's evolution in the digital age.

1. Introduction to Digitization in the Fashion Industry

The fashion industry's venture into digitisation represents a significant transformation, combining conventional aesthetic sensibilities with state-of-the-art digital advancements. This amalgamation has not only redefined the operational and creative landscapes of the industry but also transformed consumer engagement and market dynamics. The digital age, characterised by rapid technological advancements, has ushered in new opportunities and challenges, compelling fashion brands to navigate a complex digital ecosystem to remain competitive and relevant (Quinn, 2012). The advent of e-commerce, social media marketing, augmented reality (AR), and artificial intelligence (AI) has democratised access to fashion, broadened the scope of consumer interaction, and fostered a more inclusive and sustainable industry (McCormick, 2014; Todeschini et al., 2017). These digital tools and platforms enable brands to connect with a global audience, offering personalised shopping experiences and engaging consumers in novel ways (Javornik, 2016). However, the integration of digital technologies also poses significant challenges, including data privacy concerns and the potential dilution of brand identity (Henninger et al., 2016). As the fashion industry continues to evolve within this digital framework, understanding the implications of digitisation becomes crucial for sustaining growth and innovation.

2. History and Background

The transition of the fashion industry into the digital realm represents a profound shift from artisanal methods to a modern, tech-infused approach. Initiated in the late 20th century with computer-aided design (CAD) software, this evolution enabled the creation of digital patterns and prototypes, streamlining garment production significantly (Tungate, 2008). The advent of the internet in the 1990s propelled this change further, introducing e-commerce as a pivotal sales channel and reshaping consumer buying behaviours. Online platforms allowed fashion brands to access worldwide markets, democratising fashion (Laudon and Traver, 2020). The 2000s saw social media revolutionising fashion marketing and engagement, with platforms like Facebook, Instagram and TikTok becoming essential for storytelling and community interaction (Kietzmann et al., 2011). Recent advancements in augmented

reality (AR) and virtual reality (VR) technologies have merged physical and digital fashion experiences, enabling virtual try-ons and digital shows (Papagiannis, 2017). Amidst digitisation, sustainability emerged as a key focus, with digital innovations aiding in waste reduction and enhancing supply chain transparency (Fletcher & Grose, 2012). As the industry progresses, fueled by AI, blockchain, and 3D printing, the fusion of technology and fashion signals a future of continuous evolution.

3. The Spectrum of Digitisation in Fashion

Digitization in fashion unfolds as a comprehensive revolution, touching every facet from design to consumer engagement through a wide array of digital innovations. Central to this shift are computer-aided design (CAD) and 3D modelling, which have transformed the design process. By facilitating virtual prototyping, these technologies expedite production and minimise waste, fostering both efficiency and creative textile and garment innovation (Sun & Zhao, 2018). Concurrently, the emergence of e-commerce has reshaped the retail sphere, enabling brands to tap into global markets effortlessly. This expansion has shifted consumer expectations towards personalised shopping experiences, a trend propelled by artificial intelligence (AI) for tailored product suggestions and improved inventory and customer service management (Tsekouras, 2020). Social media platforms, notably Instagram and TikTok, have become central to fashion marketing, facilitating direct engagement between brands and their audience. These platforms enable brands to interact in real-time, share stories, and foster community, revolutionising the way fashion is experienced and consumed (Jin & Cedrola, 2019). Augmented Reality (AR) and Virtual Reality (VR) further enhance this digital transformation, offering immersive experiences such as virtual try-ons and digital showrooms, thereby reshaping consumer interactions with fashion (Papagiannis, 2020). Gucci's strategic use of these platforms demonstrates the immense potential of social media in fashion. Through captivating visuals and compelling narratives, Gucci has significantly expanded its audience reach and fortified customer loyalty. This approach not only exemplifies the effective utilisation of digital platforms for brand growth but also positions Gucci as a pioneering force in the digital fashion landscape, illustrating the comprehensive and ongoing digitization of the fashion industry (Business of Fashion, 2020).

4. Impact on Small Brands and Businesses

Digitization has profoundly transformed the landscape for small fashion brands, opening up a myriad of opportunities and challenges that redefine their presence in the market and their operational efficiency. This digital wave has democratised access to global audiences, enabling tailored consumer interactions and streamlining operations like never before. Central to this revolution are e-commerce platforms, which mitigate the dependency on physical stores and facilitate global market penetration. Wagner et al. (2017) illustrate how these platforms empower small brands to effectively manage inventories and nurture customer relationships, equating their capabilities with those of larger, global competitors. The affordability and expansive reach of digital marketing through social media also present significant advantages, allowing brands to forge their identity and cultivate direct audience engagement with limited budgets (Jin & Cedrola, 2019). However, transitioning to digital also presents hurdles, particularly in mastering digital marketing techniques and facing increased competition. Small brands must become adept in SEO and data analytics to offer personalised customer experiences (Tsekouras, 2020). Additionally, the shift towards sustainability, facilitated by digitization, demands initial investments and a strong commitment to eco-friendly practices (Fletcher & Grose, 2012). A compelling example is the small fashion brand Reformation. Known for its sustainability efforts, Reformation has harnessed digital platforms to enhance its market reach and operational efficiency. By leveraging Instagram for marketing and using

an e-commerce platform to sell globally, Reformation has successfully positioned itself as a leader in sustainable fashion, illustrating the potential for small brands to thrive through digitization (Amed, 2020). In summary, while digitization opens doors for innovation and expansion for small fashion brands, seizing these opportunities requires strategic insight, digital proficiency, and a commitment to navigate the complexities of the digital marketplace.

5. Enhancing Consumer Engagement through Digital Innovations

Digital technologies are revolutionising consumer engagement in the fashion industry, fostering personalised and immersive experiences that blend the digital with the tangible. Augmented Reality (AR) and Virtual Reality (VR) technologies are leading this charge, offering virtual fittings and experiential brand interactions that enhance online shopping by simulating physical presence (Papagiannis, 2020). This innovative approach not only enriches the shopping experience but also deepens consumer engagement with fashion brands. Social media platforms have become crucial for fashion brands to directly connect with their audience. Instagram and TikTok, in particular, allow brands to showcase their latest collections, share exclusive behind-the-scenes content, and engage in real-time dialogue with consumers (McCormick, 2014). This level of interaction builds a strong sense of community and brand loyalty. Further enhancing consumer engagement, Artificial Intelligence (AI) utilises consumer data to deliver personalised shopping experiences



FIGURE 14

and recommendations (Tsekouras, 2020). This targeted approach meets individual preferences, increasing satisfaction and loyalty. Moreover, the integration of storytelling in e-commerce platforms enables brands to communicate their values and narratives, establishing deeper emotional connections with consumers. This strategy not only drives sales but also fosters a lasting relationship between consumers and brands, highlighting the profound impact of digital innovations on consumer engagement in the fashion industry.

6. Digitization's Role in Promoting Sustainability and Ethical Fashion

Digitization is revolutionising the fashion industry's approach to sustainability and ethics, acting as a catalyst for environmental responsibility and mindful consumerism. By integrating advanced digital technologies, fashion brands are now able to offer unprecedented supply chain transparency, minimise production waste, and actively engage consumers in their eco-friendly initiatives. Notably, blockchain technology provides a transparent, unalterable record of every step in the garment's lifecycle, empowering consumers to choose brands committed to ethical practices (Niinimäki et al., 2020). Digital tools such as CAD software and 3D modelling significantly reduce the reliance on physical samples, decreasing material waste and the environmental toll of traditional manufacturing (Gwilt, 2019). Furthermore, the rise of e-commerce and digital marketplaces promotes the circular economy, encouraging the adoption of second-hand and rental fashion to extend the lifespan of clothing and reduce the need for new production (Bocken et al., 2019). Digital platforms also offer a vital channel for raising awareness about sustainable fashion, with brands leveraging social media to educate consumers about the impacts of their fashion choices, fostering a shift towards more sustainable and ethical consumption patterns (Henninger et al., 2016). Thus, digitisation is pivotal in guiding the fashion industry towards a future where sustainability and ethics are central to its evolution.

7. Fostering Diversity and Inclusivity through Digital Platforms

Digital platforms are revolutionising the fashion industry's approach to diversity and inclusivity. Through social media's widespread and interactive capabilities, fashion entities are presenting a broader spectrum of body types, cultures, and styles, thereby challenging entrenched beauty ideals and enhancing

representation (McCormick, 2014). Platforms like Instagram and TikTok have democratised the fashion space, allowing individuals from diverse backgrounds to contribute their stories and designs, thereby diversifying the fashion narrative (Jin & Cedrola, 2019). Additionally, e-commerce sites and digital marketplaces enhance inclusivity by offering an array of products tailored to a varied consumer base, such as adaptive clothing and extensive size options. This strategy addresses the needs of previously

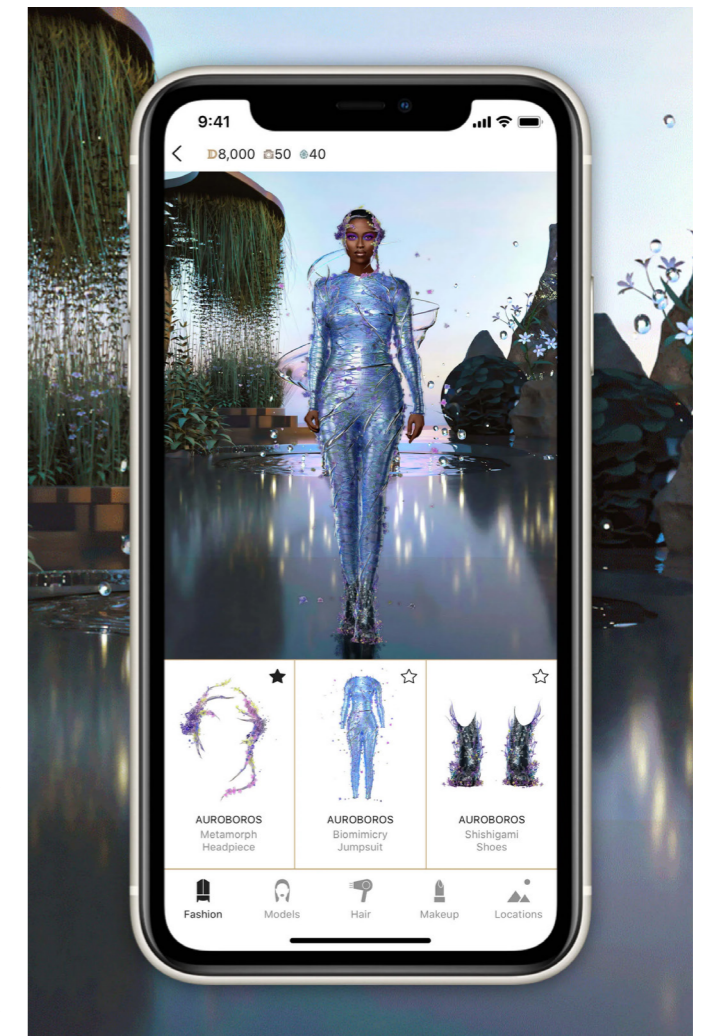


FIGURE 15

overlooked markets and highlights the industry's dedication to inclusivity (Barnes & Lea-Greenwood, 2006). Furthermore, advancements in AI and data analytics pave the way for customised shopping experiences, catering to each consumer's unique preferences and requirements. Such personalization ensures that fashion is accessible and resonant for everyone, celebrating diversity across all facets of identity and physique (Tsekouras, 2020). Overall, digital platforms play a pivotal role in cultivating a more inclusive and diverse fashion industry, tearing down traditional barriers and championing a universally representative narrative.

8. The Future of Digital Fashion Shows

Digital fashion shows are reshaping the runway experience, blending technology with style to create a new paradigm far removed from traditional presentations. Utilizing advanced technologies such as augmented reality (AR), virtual reality (VR), and live streaming, these shows enable designers to present their collections virtually to a global audience. This shift towards digital showcases is part of the fashion industry's broader adaptation to changing consumer demands and challenges, notably those amplified by the global pandemic. As a result, the fashion world is witnessing a rapid transformation in how collections are displayed and interacted with worldwide. The evolution towards digital fashion shows is a pivotal shift in the industry, fueled by technological progress and evolving consumer demands. This transition, catalysed by the global pandemic, has pushed brands towards virtual platforms transforming how collections are unveiled and consumed worldwide. Utilising augmented reality (AR), virtual reality (VR), and live streaming, digital shows offer immersive experiences that break free from the spatial constraints of conventional runways, enabling access to a global audience (Todeschini et al., 2017). Moreover, these digital alternatives align with the fashion industry's increasing focus on sustainability, significantly reducing the environmental impact traditionally associated with the logistics of fashion shows (Niinimäki et al., 2020). Digital platforms democratise fashion, making once-exclusive runway shows accessible to a broader audience and promoting diversity and inclusivity within the industry (McCormick, 2014). This open access

fosters a dynamic interaction between designers and the public, enhancing consumer engagement and feedback. While challenges exist in replicating the sensory richness of physical events, ongoing technological advancements promise to bridge this gap, offering richer and more engaging digital experiences (Javornik, 2016). In essence, digital fashion shows are poised to redefine the industry's future, embodying a sustainable, inclusive, and technologically enriched alternative to traditional presentations. As this digital frontier expands, it is set to become a cornerstone of fashion's evolving narrative, reshaping how fashion is showcased and experienced in the years to come.

Virtual fashion shows have become a noteworthy trend in the fashion industry, particularly as brands seek innovative ways to showcase their collections amidst global challenges such as the COVID-19 pandemic. These digital events have allowed designers to reach a global audience while overcoming the limitations of traditional runway shows. Here are several real examples that highlight the diversity and creativity of virtual fashion shows:

Balenciaga's Fall 2021 Collection - "Afterworld: The Age of Tomorrow": Balenciaga presented its Fall 2021 collection through an innovative video game titled "Afterworld: The Age of Tomorrow." Players navigated through various zones, each showcasing the brand's latest designs in a post-apocalyptic setting, blending fashion with digital storytelling and gaming technology.

Gucci's "GucciFest": Gucci launched "GucciFest," a seven-day film festival that aired on YouTube, Weibo, and the brand's

website. The festival featured "Overture of Something that Never Ended," a seven-part mini-series co-directed by Gus Van Sant and Alessandro Michele, showcasing Gucci's new collection within cinematic narratives.

Moschino's Spring/Summer 2021 - "No Strings Attached": For the Spring/Summer 2021 season, Moschino's Jeremy Scott created a puppet show, with miniature versions of the collection's pieces worn by marionette models. The show was a creative response to the social distancing measures, offering a whimsical and imaginative presentation of the collection.

Hanifa's 3D Virtual Runway - "Pink Label Congo": Hanifa presented its "Pink Label Congo" collection via Instagram Live, utilizing 3D models without human faces or bodies to showcase the designs. This approach allowed the brand to highlight the clothes' movement and texture in a novel and engaging way, emphasizing the collection's inspiration and themes.

London Fashion Week - June 2020: London Fashion Week went fully digital for the first time in June 2020, offering a gender-neutral platform that included virtual showrooms, webinars, and digital runways. Designers such as Charles Jeffrey Loverboy took advantage of the format to present their collections through creative videos and digital experiences.

These examples illustrate the fashion industry's adaptability and creativity in leveraging digital platforms to present collections. Virtual fashion shows not only provide a solution to the challenges posed by physical event restrictions but also open up new possibilities for creative expression and audience engagement.

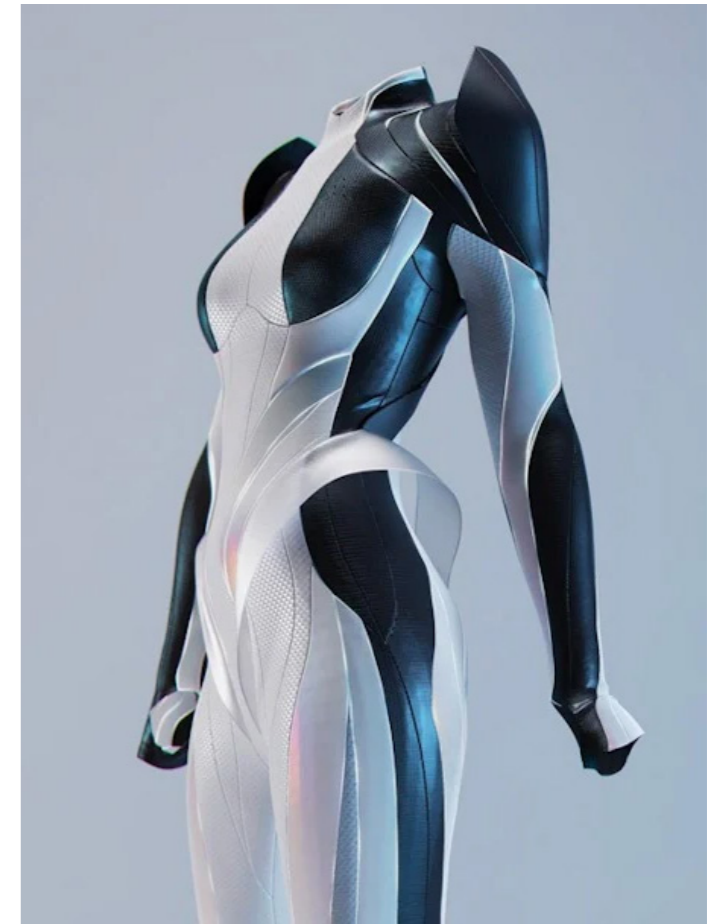


FIGURE 18

9. Research Problem

The advent of digitisation in the fashion industry, characterised by an increasing reliance on digital technologies for design, marketing, production, and retail, poses a critical question regarding its longevity and impact: Is digitisation merely a transient trend or the definitive future of fashion? This research problem emerges from the juxtaposition of digitisation's potential to revolutionise the industry against concerns about its sustainability and the depth of its integration into traditional fashion systems. Digitization has undeniably transformed the landscape of fashion, enabling brands to enhance creativity, reach a global audience more efficiently, and streamline operations. As noted by Todeschini et al. (2017), digital platforms have opened new avenues for consumer engagement and market expansion, suggesting a profound shift in how fashion is consumed and experienced. However, the rapid pace of digital adoption and its disruptive nature raises questions about the long-term viability and implications of such a transformation. Will the digital initiatives adopted by fashion brands endure, becoming integral to the industry's future, or are they temporary measures in response to current market dynamics and global challenges?



FIGURE 16

DIGITAL FASHION WEEK

FIGURE 17

LITERATURE REVIEW

Exploring the profound impact of digital technologies on the fashion industry, from enhancing design and production processes to reshaping marketing strategies and consumer engagement, while prioritizing sustainability and ethical practices.

The digitisation of the fashion industry represents a transformative shift that touches all aspects of the sector, from design and production to marketing and retail, driven by an evolving digital landscape. This literature review synthesises key insights from current research, highlighting the role of digital technologies in revolutionising industry practices and consumer engagement.

Design and Production Innovations

Digitization has revolutionised fashion design and production, introducing efficiencies and new creative possibilities. 3D printing and computer-aided design (CAD) software have emerged as pivotal tools. As Sun and Zhao (2018, p. 75) note, "3D virtual try-on technology significantly enhances the efficiency and effectiveness of the garment design and manufacturing process." This digital approach not only accelerates the design phase but also minimises waste, supporting sustainability efforts within the industry.

The Impact of E-commerce and Online Retailing

The rise of e-commerce has significantly expanded the global reach of fashion brands, altering traditional retail models. Wagner et al. (2017, p. 270) states that, "E-commerce platforms have become instrumental in

reshaping consumer purchasing behaviours, offering personalised shopping experiences that transcend geographical boundaries." This digital evolution underscores the shifting dynamics of fashion retail, emphasising the importance of online presence for brands

Social Media's Role in Fashion Marketing

Social media platforms have become crucial for marketing and consumer engagement within the fashion industry. Jin and Cedrola (2019, p. 1) emphasise the transformative impact of social media, suggesting that "social media platforms offer fashion brands unparalleled opportunities to engage directly with their audience, fostering community and driving brand loyalty." This digital engagement strategy highlights the role of social media in building brand identity and consumer relationships.

Consumer Engagement Through Digital Innovations

Augmented Reality (AR) and Virtual Reality (VR) technologies offer novel ways to engage consumers, enhancing the online shopping experience. Papagiannis (2020, p. 102) illustrates this point by stating, "AR and VR technologies revolutionise the retail experience, allowing consumers to

interact with products in immersive digital environments." These technologies provide consumers with unique and interactive ways to explore fashion products, bridging the gap between physical and digital experiences.

Sustainability and Ethical Fashion

Digitization also plays a critical role in promoting sustainability and ethical practices within the fashion industry. Blockchain technology, for instance, offers transparency in the supply chain. Niinimäki et al. (2020, p. 192) highlight the potential of digital tools for sustainability, asserting that "digital innovations can drive significant environmental benefits, offering transparency, efficiency, and a reduction in waste." This perspective underscores the importance of leveraging digital technologies to address the environmental impact of fashion.

Conclusion

In summary, the literature reveals that digitisation is profoundly reshaping the fashion industry, offering opportunities for innovation, efficiency, and sustainability. From the creative possibilities of 3D printing and CAD to the expansive reach of e-commerce and the engaging power of social media and AR/VR technologies, digital tools are integral to the future of fashion. Moreover, the emphasis on sustainability and ethical practices through digitisation reflects a growing industry commitment to responsible fashion. As the sector continues to evolve, the integration of digital technologies will undoubtedly play a pivotal role in shaping its trajectory.



FIGURE 19

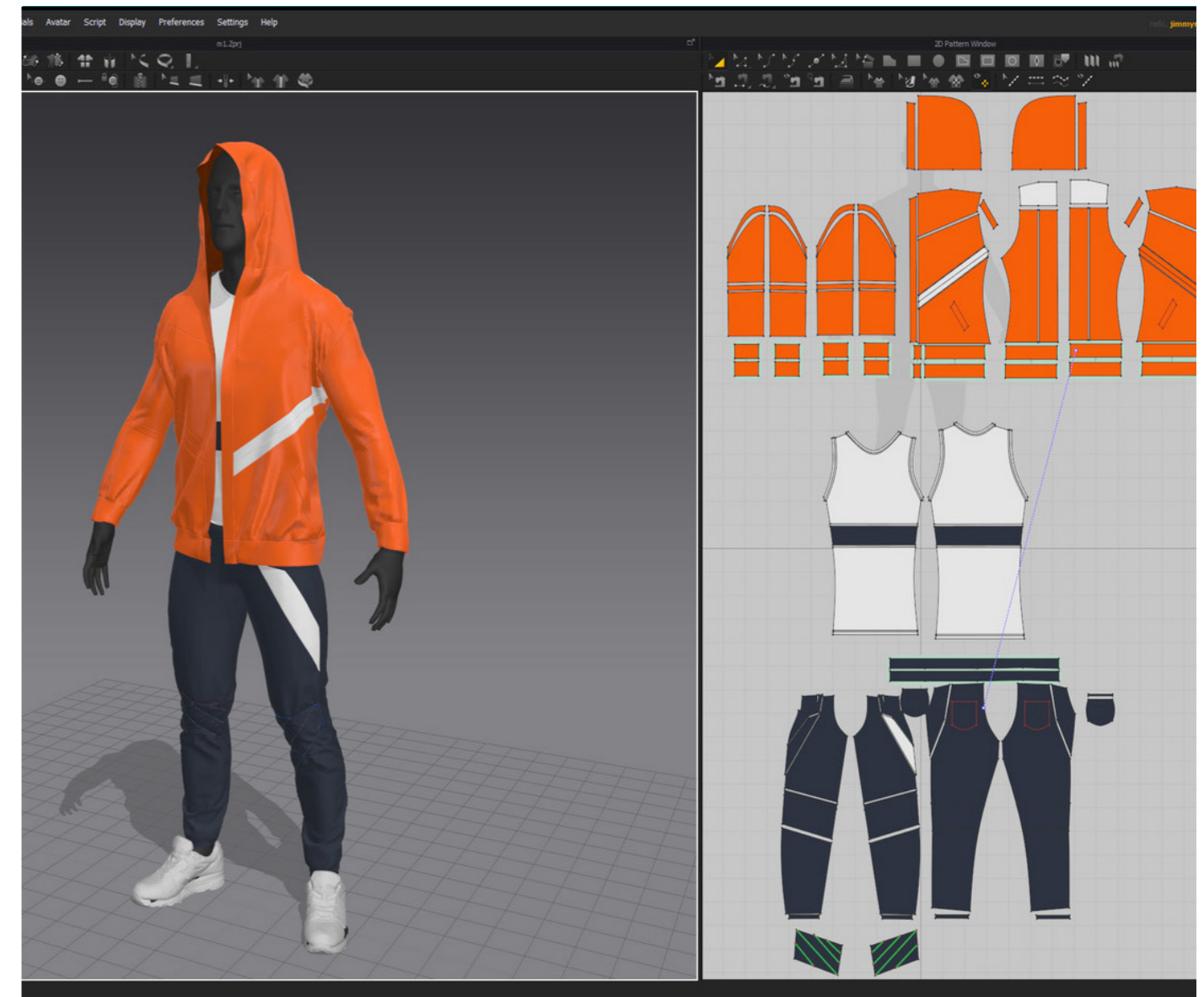


FIGURE 20

CHAPTER CONCLUSION

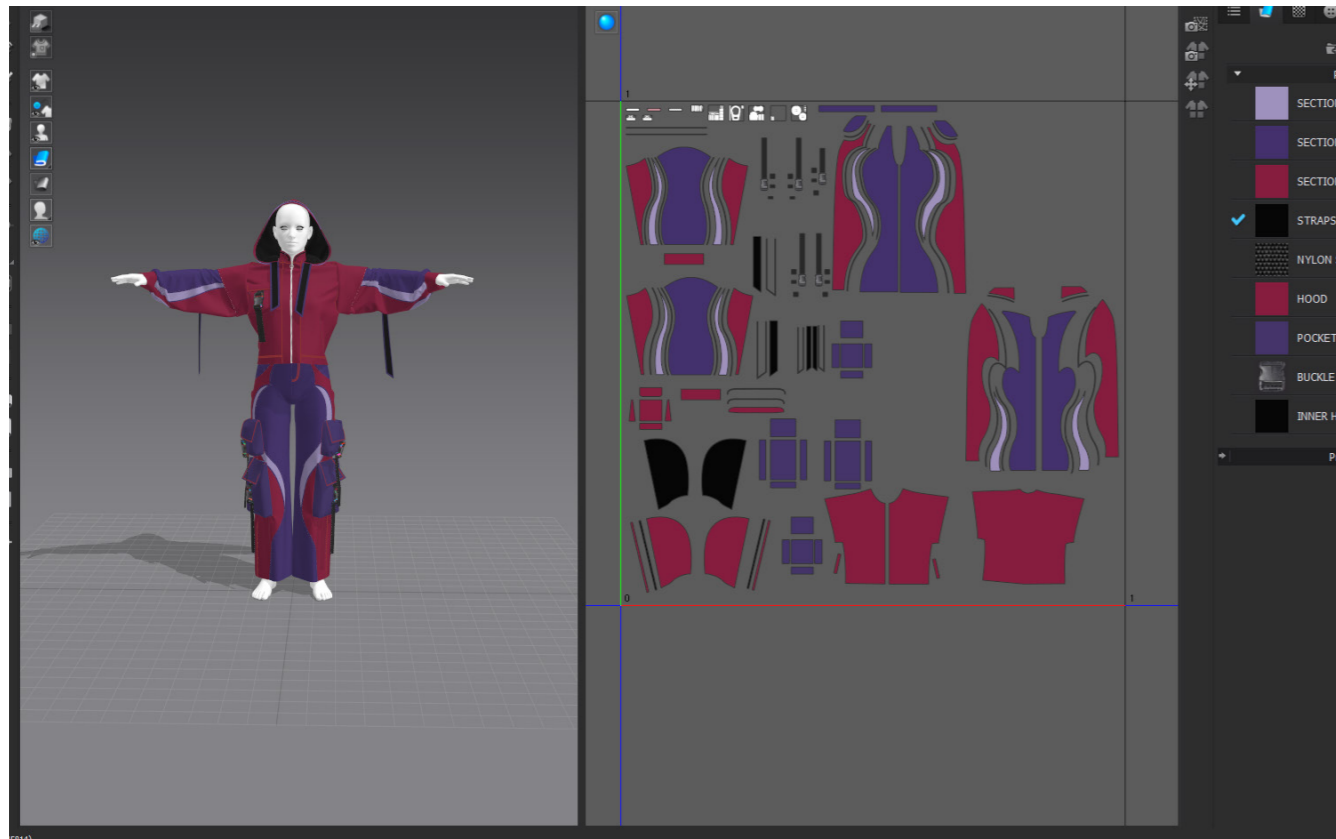


FIGURE 21

Digitization in the fashion industry marks a significant shift, intertwining technology with cultural change to redefine industry dynamics. This transformative journey has opened new avenues for innovation and sustainability, while also highlighting the challenges emerging brands face in a competitive digital landscape. The move towards digital platforms has enhanced consumer engagement, fostered diversity and inclusivity, and promoted ethical practices. Notably, digital fashion shows illustrate the industry's capacity for creativity and technological integration. As research and case studies suggest, digitization is not fleeting but a central force in fashion's ongoing evolution. It promises a future where the industry not only embraces technology but is also fundamentally transformed by it, offering a landscape ripe with creative and sustainable opportunities.

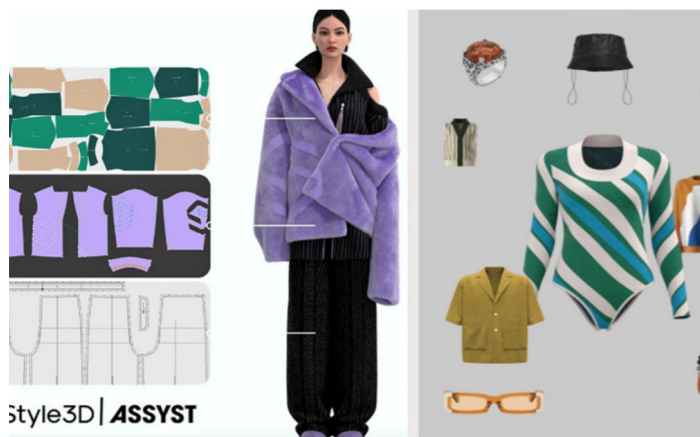


FIGURE 22

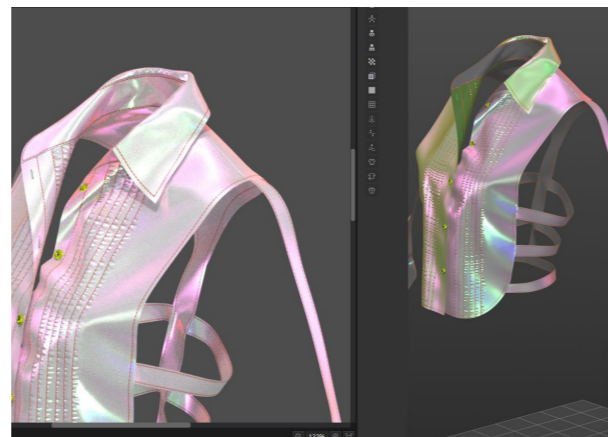


FIGURE 23

CHAPTER TWO

CHAPTER INTRODUCTION

Chapter Two delves into the digital frontier of the fashion industry through the lens of groundbreaking case studies: Lululemon's acquisition of Mirror, the innovative collaboration between Snapchat and DressX and Balenciaga's virtual reality venture, "Afterworld: The Age of Tomorrow." These case studies illustrate the dynamic interplay between fashion and digital technology, showcasing how brands leverage digital platforms and technologies to revolutionise the consumer experience, marketing strategies, and the very notion of fashion shows. By examining these instances of digital ingenuity, this chapter aims to unravel the strategic motivations behind such digital transformations, assess their impact on brand identity and consumer engagement, and explore the broader implications for the future of fashion. Through this exploration, readers will gain insights into how digitisation is not just reshaping the operational aspects of fashion brands but is also redefining the industry's creative horizons and sustainability approaches.



FIGURE 24



FIGURE 25

CASE STUDY

Lululemon and the Smart Mirror – Revolutionising Home Fitness

I n t r o d u c t i o n B a c k g r o u n d

In June 2020, Lululemon, a renowned athletic apparel company, made a strategic move to enhance its digital and home fitness offerings by acquiring Mirror, a startup known for its interactive smart mirror. This acquisition signalled Lululemon's entry into the expanding market of home fitness technology, leveraging the smart mirror to combine fashion, fitness, and technology in an innovative way.



FIGURE 26

The smart mirror by Mirror is a cutting-edge, interactive fitness device that functions as a personal trainer within the home. It streams live and on-demand fitness classes across a variety of workout genres, directly onto its reflective surface, allowing users to engage in an immersive fitness experience. Lululemon's acquisition of Mirror for \$500 million was a strategic response to the increasing demand for home fitness solutions, especially accentuated by the COVID-19 pandemic and the closure of gyms worldwide (Lululemon Athletica Inc., 2020).

I m p l e m e n t a t i o n

Lululemon integrated Mirror's technology with its brand ethos of promoting health and wellness, aiming to offer a comprehensive home fitness solution to its customers. The smart mirror not only delivers a wide range of fitness classes but also provides real-time feedback and personalization, making it a unique offering in the home fitness market. Additionally, Lululemon began leveraging its retail locations and online platforms to market the smart mirror, integrating it with its existing product lines to enhance customer engagement (Lululemon Athletica Inc., 2020).

I m p a c t

The smart mirror has significantly impacted Lululemon's business model and market positioning. It has allowed the company to tap into the growing home fitness market, diversify its product offerings, and strengthen its brand identity as a leader in health and wellness. The smart mirror has also enabled Lululemon to collect valuable data on customer fitness preferences and behaviours, informing product development and marketing strategies. Furthermore, the integration of fitness technology into Lululemon's offerings has fostered deeper customer engagement and loyalty, as consumers look for comprehensive wellness solutions (Smith, 2021).



Lululemon

FIGURE 27 Lululemon Athletica, 2023

Challenges and Opportunities

Despite its success, Lululemon's venture into the smart mirror market presents challenges, including high product costs and the competitive landscape of home fitness technology. However, these challenges are met with significant opportunities. The smart mirror positions Lululemon at the intersection of fashion, fitness, and technology, offering a platform for future innovation and collaboration. Moreover, as home fitness continues to evolve, Lululemon can leverage its established brand and retail network to introduce new digital wellness products and services (Jones, 2020).

C o n c l u s i o n

Lululemon's acquisition of Mirror and the subsequent integration of the smart mirror into its product offerings represent a strategic pivot towards digital wellness and home fitness. This case study illustrates how traditional retail brands can successfully enter and impact new markets through technological innovation and strategic acquisitions. As Lululemon continues to explore the potential of digital fitness, the smart mirror serves as a testament to the brand's commitment to innovation, wellness, and customer engagement in an increasingly digital world.

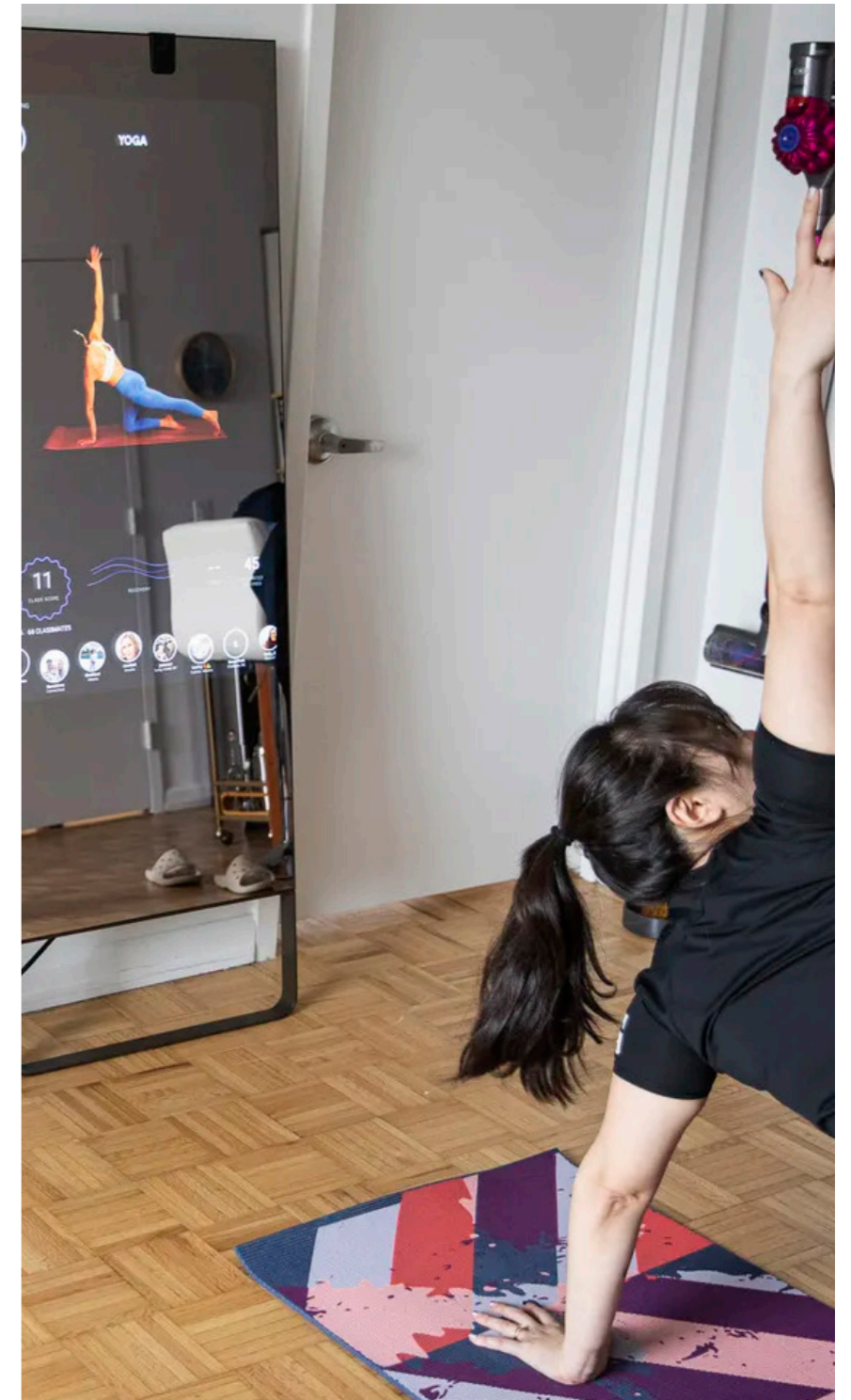


FIGURE 28

CASE STUDY

Snapchat and DressX - Revolutionising Fashion with Digital Wardrobes



FIGURE 29

Introduction Background

In a groundbreaking collaboration Snapchat, a popular social media platform known for its engaging augmented reality (AR) features, partnered with DressX a digital fashion company to allow users to dress their Bitmoji avatars in DressX clothes. This partnership marks a significant step towards the fusion of digital fashion with social media, offering users a novel way to interact with fashion in a purely digital realm.

Snapchat has long been at the forefront of integrating AR technology to enhance user experiences, while DressX has established itself as a pioneer in digital fashion, offering 3D clothing items that exist solely in the digital space. The collaboration between Snapchat and DressX leverages the strengths of both companies to explore the potential of digital fashion in social media contexts.

Implementation

Users can access the DressX collection directly through the Snapchat platform, selecting from a range of digitally designed outfits to adorn their Bitmoji avatars. This integration not only allows for a personalised social media experience but also introduces users to the concept of digital fashion ownership. As noted by Rogers (2021), "The partnership brings the world of high fashion into the digital domain, allowing users to experiment with styles and identities in a completely virtual environment."

Impact

The Snapchat and DressX collaboration has several implications for the fashion industry and consumer behaviour. Firstly, it democratises access to fashion, allowing users to 'wear' luxury and exclusive designs virtually without the high costs associated with physical garments. Secondly, it reduces the environmental footprint associated with fashion consumption, aligning with growing consumer demand for sustainable practices (Niinimäki et al., 2020). Lastly, it signals a shift in how fashion is consumed and perceived, suggesting a future where digital garments could become as coveted as physical ones.

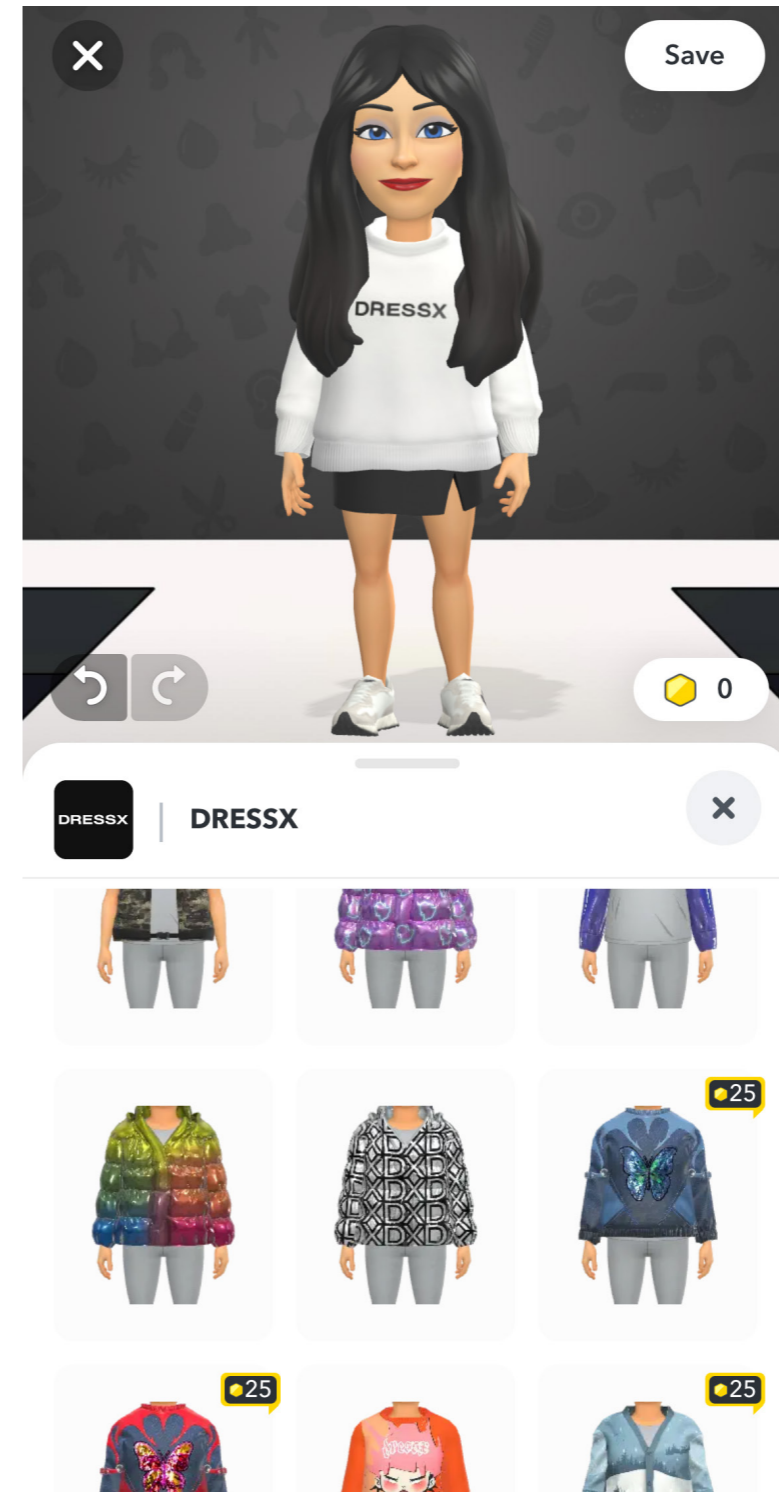


FIGURE 30



FIGURE 31



FIGURE 32

Challenges and Opportunities

Despite its innovative approach, the collaboration faces challenges, particularly regarding consumer acceptance of digital fashion as a mainstream concept. Scepticism about the value and utility of digital-only garments persists, highlighting the need for continued education and awareness-raising efforts. However, the partnership also presents significant opportunities, especially in terms of engaging younger, tech-savvy demographics who are already accustomed to virtual identities and digital interactions. Additionally, as the technology behind AR and digital fashion advances, the potential for more realistic and immersive experiences grows, further blurring the lines between digital and physical fashion.

Conclusion

The partnership between Snapchat and DressX represents a pioneering move towards integrating digital fashion into everyday social media use. By allowing users to dress their Bitmoji avatars in DressX clothes, this collaboration not only enhances the user experience on Snapchat but also propels the concept of digital fashion into the mainstream consciousness. As the fashion industry continues to evolve in the digital age, collaborations like this will likely become more common, reshaping the way we think about fashion, identity, and sustainability.

CASE STUDY

Balenciaga's Fall 2021 Collection - "Afterworld: The Age of Tomorrow"

I n t r o d u c t i o n

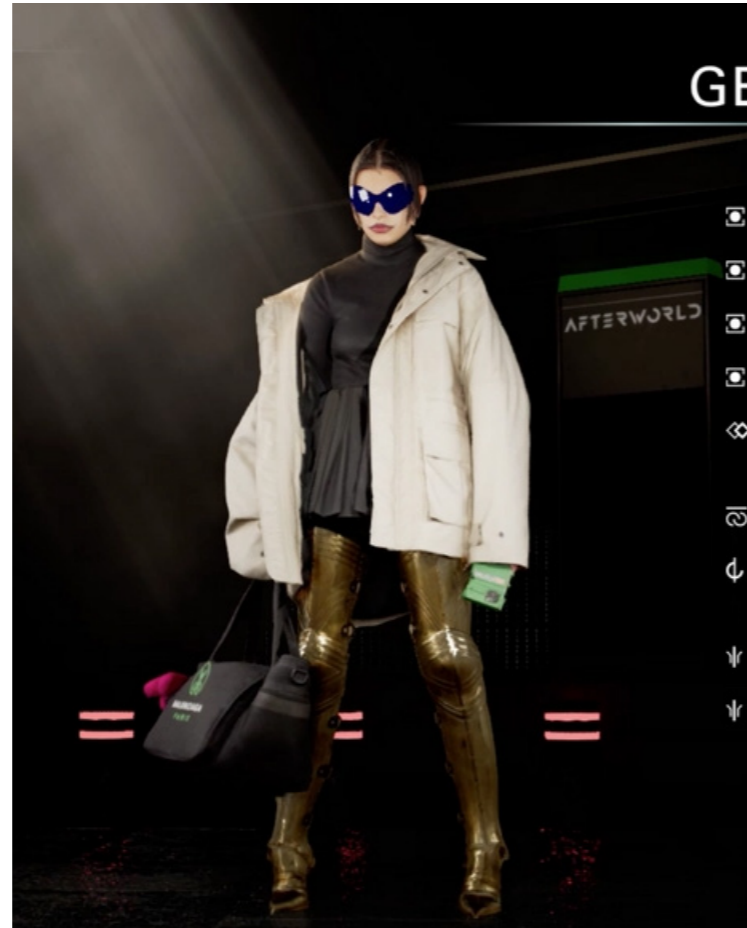
In a pioneering move within the fashion industry, Balenciaga presented its Fall 2021 collection through "Afterworld: The Age of Tomorrow," an innovative video game set in 2031. This initiative marked a significant departure from traditional runway shows, leveraging Virtual Reality (VR) and gaming technology to create an immersive and interactive fashion experience. This case study explores Balenciaga's use of VR technology to present its collection, highlighting the brand's efforts to blend fashion with digital innovation.

B a c k g r o u n d

With the advent of the COVID-19 pandemic and the subsequent limitations on physical gatherings, fashion brands sought alternative methods to showcase their collections. Balenciaga, under the creative direction of Demna Gvasalia, embraced this challenge by venturing into the digital realm, choosing to unveil its Fall 2021 collection through a virtual environment that pushed the boundaries of conventional fashion presentations.

I m p l e m e n t a t i o n

"Afterworld: The Age of Tomorrow" is a video game that invites players to navigate through various zones, each designed with intricate details and showcasing Balenciaga's collection within a futuristic narrative. Players embark on a hero's journey, encountering the collection in scenarios that range from city streets to forest encounters, blending elements of fantasy with high fashion. The game was developed using advanced VR technology, ensuring a high level of interactivity and visual fidelity, offering players a unique way to experience the collection.



I m p a c t **FIGURE 33**

Balenciaga's virtual runway show represented a significant milestone in the use of digital technology within the fashion industry. It demonstrated the potential of VR and gaming to create new avenues for brand storytelling and consumer engagement. The initiative garnered widespread attention from both the fashion and tech industries, highlighting the possibilities for future collaborations between these sectors. Furthermore, it set a precedent for how fashion brands could innovate in response to global challenges, offering a sustainable and accessible alternative to traditional runway shows.



FIGURE 34

Challenges and Opportunities

While Balenciaga's venture into VR and gaming was highly successful, it also underscored challenges such as the need for technological accessibility and the potential for digital divide issues. However, the initiative opened up numerous opportunities for the brand, including reaching younger, tech-savvy audiences and exploring new forms of consumer interaction. It also prompted discussions on the environmental benefits of digital fashion shows, pointing towards a more sustainable model for the industry.

C o n c l u s i o n

Balenciaga's "Afterworld: The Age of Tomorrow" stands as a testament to the transformative power of VR technology in fashion. By merging the virtual with the tangible, Balenciaga not only presented its collection in a novel manner but also charted a course for the future of fashion presentations. This case study illustrates the potential of digital innovation to redefine the parameters of fashion shows, offering insights into the evolving relationship between fashion, technology, and sustainability.

BALENCIAGA

FIGURE 36

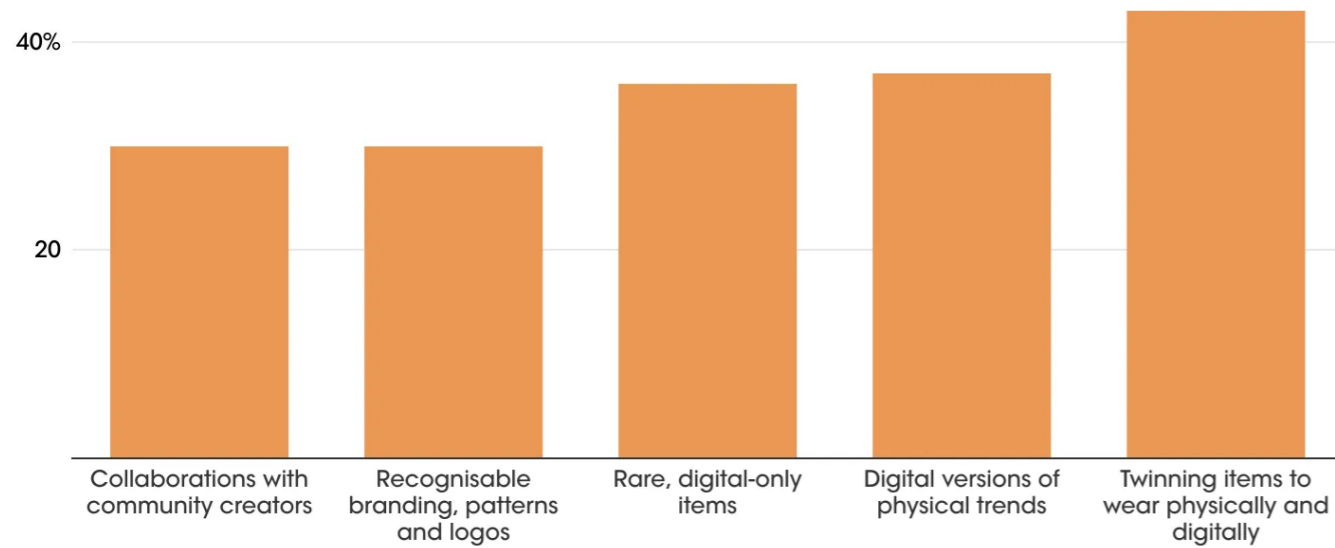


FIGURE 35

CHAPTER CONCLUSION

The exploration of Lululemon, Snapchat and DressX, and Balenciaga's digital initiatives in Chapter Two provides compelling evidence of the fashion industry's rapid evolution towards digitisation. Lululemon's strategic acquisition of Mirror reveals the growing significance of integrating digital fitness and wellness into fashion retail, pointing to a future where fashion brands extend their influence into lifestyle domains. The Snapchat and DressX partnership highlights the potential of augmented reality to merge digital content with personal expression, offering a glimpse into future possibilities for personalization and virtual fashion. Meanwhile, Balenciaga's "Afterworld: The Age of Tomorrow" serves as a testament to the creative and immersive possibilities afforded by virtual reality, pushing the boundaries of how fashion narratives and collections are presented. Collectively, these case studies underscore a transformative shift in the fashion industry, driven by digital innovation. As brands continue to navigate this digital landscape, the insights derived from these examples illuminate the pathways towards engaging consumer experiences, enhanced brand storytelling, and a more sustainable fashion ecosystem. The journey of digitisation in fashion is far from over, with these case studies marking just the beginning of an exciting, technology-driven era in fashion.

What people want from fashion brands in the metaverse



n = 1,545 Gen Z users aged 14-26 living in the US and UK.

FIGURE 37



FIGURE 38

CHAPTER THREE

CHAPTER INTRODUCTION



FIGURE 39



FIGURE 40

The digitisation of the fashion industry heralds a transformative era, redefining the paradigms of creation, marketing, and consumption in an age dominated by technological advancements. This seismic shift is propelled by the integration of digital technologies such as artificial intelligence (AI), augmented reality (AR), and e-commerce into the fabric of fashion practices, challenging traditional methodologies and opening new avenues for innovation. As consumer behaviours evolve towards a digital-first approach, fashion brands and designers are compelled to navigate a landscape where digital presence and interaction

become as crucial as the physical. The implications of this digital transformation extend beyond mere operational changes; they encapsulate a broader reimagining of fashion as an industry and a cultural entity. This essay delves into the mixed impact of digitisation on the fashion industry, exploring how it influences creative practices, redefines the role of education, and ushers in emerging digital practices. Through this exploration, we aim to uncover the complexities and opportunities presented by the digitisation of fashion, offering insights into its challenges and its potential to shape the future of the industry.

Data-Driven Insights on Digital Transformation in Fashion

The digital transformation within the fashion industry is propelled by an array of data-driven insights, which have fundamentally altered how brands interact with consumers and approach the design and retail process. The advent of e-commerce has not only expanded the reach of fashion brands but also introduced a new paradigm of personalised shopping experiences. According to a study by Wagner et al. (2017), online platforms have become critical to engaging with a global consumer base, showcasing the power of digital channels in transcending geographical boundaries. Furthermore, the utilisation of artificial intelligence (AI) in analysing consumer data has revolutionised personalised marketing and product recommendations (Tsekouras, 2020), enhancing consumer satisfaction and loyalty by tailoring offerings to individual preferences. These advancements underscore the shift towards a more data-centric approach in fashion, where decisions are increasingly driven by consumer insights and analytics. The integration of digital tools into creative and operational processes signifies a broader move towards agility and innovation, facilitating a closer alignment with evolving consumer demands. As the industry navigates through the challenges and opportunities presented by digital transformation, the reliance on data-

driven strategies becomes a cornerstone for future growth and competitiveness in the fashion sector.

Revealing New Perspectives on Art and Fashion through Digitization

Digitization has ushered in a new era for the intersection of art and fashion, challenging traditional boundaries and fostering a novel space for creative expression. The fusion of digital technologies with fashion design has not only expanded the toolkit available to designers but also introduced an innovative platform for artistic exploration. McCormick (2014) notes that digital platforms have become pivotal in showcasing fashion as a form of digital art, where the virtual realm allows for the transcendence of physical limitations. This digitisation has facilitated unprecedented levels of experimentation with form, colour, and texture, enabling designers to create pieces that might only exist in the digital world. Moreover, the advent of augmented reality (AR) and virtual reality (VR) technologies in fashion presentations has transformed the runway experience, making it an immersive art form that extends beyond the tactile to engage the visual and spatial senses of the audience (Javornik, 2016). These digital innovations not only redefine the presentation of fashion but also how it is experienced, emphasising the narrative and conceptual aspects of fashion collections. As



FIGURE 41

such, digitisation in fashion blurs the lines between the wearable and the conceptual, offering new perspectives on the relationship between fashion and art. This evolving dynamic points to a future where fashion is not just seen as a commodity but as an integral part of the cultural and artistic discourse.

The Role of Education in Shaping Digital Fashion Practices

The role of education in shaping digital fashion practices is pivotal as the fashion industry navigates through the digital transformation. Integrating digital tools and methodologies into fashion education not only equips future professionals with necessary skills but also fosters innovation and adaptability. Quan et al. (2020) emphasise the importance of teaching digital design techniques, such as 3D modelling and computer-aided design (CAD), to prepare students for the evolving demands of the fashion industry. This educational approach encourages a blend of creativity and technical proficiency, enabling graduates to contribute effectively to the digital fashion landscape. Moreover, the incorporation of sustainability concepts and digital marketing strategies within fashion curricula highlights the industry's shift towards more ethical practices and online consumer engagement (Niinimäki et al., 2020). By exposing students to these contemporary issues, fashion education plays a crucial role

in developing professionals who are not only skilled in digital techniques but are also aware of the broader implications of their work on society and the environment.

Digitization in Fashion: Evaluating the Creative and Practical Implications

Digitization in fashion brings both creative and practical implications that significantly transform the industry's landscape. Creatively, digital technologies offer designers an unprecedented ability to experiment with designs, materials, and presentations. Virtual and augmented reality tools enable the visualisation of garments in 3D space, pushing the boundaries of traditional fashion design (Javornik, 2016). This creative liberation, however, comes with the practical implications of mastering new digital tools and integrating them into the conventional design process, posing a learning curve for established designers and brands. From a practical standpoint, digitisation streamlines production processes, from design to distribution, enhancing efficiency and reducing waste. The adoption of digital sampling, for example, allows for rapid prototyping and adjustments, minimising the environmental impact associated with physical samples (Sun & Zhao, 2018). Moreover, e-commerce platforms and digital marketing strategies have opened new channels for reaching consumers, necessitating a shift in how fashion brands conceive and execute their retail strategies.

While these digital advancements offer myriad opportunities, they also require brands to navigate the challenges of cybersecurity, intellectual property rights, and the digital divide among consumers.

Emerging Practices: A Deep Dive into the Industry's Digital Future

Emerging digital practices signify a pivotal shift towards the future of the fashion industry, characterised by innovation, sustainability, and enhanced consumer engagement. The integration of blockchain technology is one such practice, offering a new level of transparency and authenticity in supply chain management. As noted by Bocken et al. (2019), blockchain enables consumers to trace the lifecycle of a garment, promoting ethical consumption and production practices. Additionally, the advent of digital-only fashion items challenges traditional notions of clothing, providing a sustainable alternative that reduces waste and environmental impact (Niinimäki et al., 2020). Another promising digital practice is the use of artificial intelligence (AI) in creating personalised shopping experiences. AI algorithms analyse consumer data to offer tailored fashion recommendations, transforming how consumers interact with brands (Tsekouras, 2020). Moreover, virtual and augmented reality technologies are redefining retail experiences, allowing customers to

try on clothes virtually, thereby bridging the gap between online and in-store shopping (Javornik, 2016). These emerging digital practices not only underscore the fashion industry's adaptability and forward-thinking approach but also highlight a commitment to sustainability, consumer centricity, and innovation. As the industry continues to embrace these digital transformations, the future of fashion promises to be more inclusive, environmentally conscious, and technologically advanced.



FIGURE 42



FIGURE 43



FIGURE 44

CHAPTER CONCLUSION

In conclusion, this exploration of digitisation within the fashion industry has illuminated a landscape marked by rapid technological advancements and shifting consumer expectations. From data-driven insights that underscore the profound impact of e-commerce and artificial intelligence to the creative avenues opened through digital artistry and virtual reality, digitisation is undeniably reshaping the fashion sector. The critical analysis presented in this chapter highlights not only the opportunities afforded by these digital transformations but also the challenges they pose, from ethical considerations to the need for digital literacy among fashion professionals. Emerging digital practices, such as blockchain for transparency and digital-only fashion for sustainability, suggest a future where the industry's growth is intertwined with technological innovation. Furthermore, the role of education in preparing the next generation of fashion professionals for this digital landscape is paramount, ensuring the continuous evolution of fashion practices in alignment with digital advancements. As we look towards the future, it is clear that digitisation will continue to be a driving force in the fashion industry, offering new possibilities for creativity, sustainability, and consumer engagement. The journey ahead promises to be one of ongoing adaptation and exploration, as the industry navigates the challenges and opportunities presented by the digital age.

CONCLUSION

The digitisation of the fashion industry, a mixed and complex phenomenon, embodies a transformative journey that intertwines technological innovation with traditional craftsmanship. This journey, marked by the rapid integration of digital technologies into every aspect of fashion, from design and production to marketing and retail, is reshaping the industry's landscape. It presents a tapestry of opportunities and challenges that collectively signal a new era for fashion. As this paper has explored, digitisation is not merely a trend but the very future of fashion, promising a realm where creativity, sustainability, and consumer engagement converge in unprecedented ways. Opportunities abound in the digitised fashion world. Digital technologies have democratised fashion, breaking down barriers to entry and allowing designers from diverse backgrounds to showcase their work on a global stage. The advent of e-commerce platforms and social media has transformed the way fashion brands interact with consumers, enabling a level of personalization and engagement previously

unimaginable. Moreover, the use of artificial intelligence and data analytics offers insights into consumer behaviour, refining the design and production processes to meet shifting demands with greater precision. Virtual and augmented reality technologies have redefined the retail experience, allowing consumers to explore and interact with fashion in immersive digital environments. However, these opportunities are accompanied by significant challenges. The digitisation of fashion raises questions about the sustainability of digital practices, the ethical implications of technology use, and the potential loss of the tangible, sensory experiences that fashion traditionally provides. There is also the risk of exacerbating the digital divide, where access to technological resources dictates participation in the fashion industry, leaving behind those without such access. Furthermore, the rapid pace of digital transformation requires continuous adaptation, posing a challenge for established brands and designers rooted in traditional methodologies.



FIGURE 45



FIGURE 46

Despite these challenges, digitisation presents a compelling vision for the future of fashion—a future characterised by innovation and inclusivity. Digital platforms offer a new canvas for creative expression, enabling designers to experiment with digital fabrics and wearable technology that push the boundaries of what fashion can be. These innovations not only enhance the aesthetic appeal of fashion but also its functionality, with smart garments that monitor health or adapt to environmental changes. Sustainability emerges as a pivotal benefit of digitisation,

with digital tools enabling more efficient use of resources, reduction of waste, and transparency in the supply chain. The growth of digital fashion items and virtual clothing, while still in its nascent stages, suggests a future where fashion consumption can be decoupled from environmental impact. The embrace of circular fashion models, facilitated by digital marketplaces for pre-owned and rental garments, further underscores the role of digitisation in promoting a more sustainable fashion industry. Education plays a critical role in preparing for this digitised future, underscoring the need for curricula that

integrate digital skills and sustainable practices. By equipping the next generation of fashion professionals with the knowledge and tools to navigate the digital landscape, the industry can ensure its continued evolution and relevance. In conclusion, the digitisation of the fashion industry is a journey marked by both promise and peril. It offers a vision of fashion that is more accessible, sustainable, and aligned with the digital age's demands. Yet, it also poses challenges that require thoughtful navigation to preserve the essence of fashion as a form of art and expression. As the industry

continues to evolve, it will be the collective responsibility of designers, brands, consumers, and educators to shape a future where digitisation enhances rather than diminishes the value of fashion. In embracing the opportunities and addressing the challenges, the fashion industry can harness digitisation not just as a trend, but as the foundation for a vibrant, inclusive, and sustainable future.

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