# Digital fashion growth sparks hope and challenges for sustainability in the industry



The fashion industry is undergoing a seismic shift, embracing digital innovations that promise to mitigate its notorious environmental impact. As fast fashion continues to inundate wardrobes and contribute to overflowing landfills, digital clothing—often referred to as "e-fashion"—has emerged as a potential sustainable alternative. Recent research highlights a growing consumer interest in this virtual garment trend, sparked predominantly by individuals who seek novel experiences and sensations.

According to a study led by Kokho Jason Sit, a senior lecturer in marketing at the University of Portsmouth, e-fashion involves digital garments that avatars can wear in virtual environments. This shift towards intangible clothing signifies the potential for substantial reductions in waste and unethical labor practices. “Nothing is physically produced, consumed, and then disposed of,” Sit explains, underlining a key advantage: e-fashion could thrive without the baggage of traditional production processes that often exploit resources and communities.

Yet, the sustainability promise of virtual garments hinges on a critical factor: their ability to displace actual clothing purchases. While proponents argue that e-fashion can foster more sustainable consumption habits, the reality remains complex. Digital clothing must replace rather than merely accompany physical items for it to make a genuine impact. The research indicates that while virtual garments can enhance consumer creativity and interactivity, they also risk entrenching a culture of excessive consumption if not carefully managed.

This concept of sustainability within e-fashion extends beyond mere reduction in material waste. The digital arena allows designers to explore and express cultural diversity in ways that physical fashion often stifles. Emerging studies reveal that digital platforms democratise the fashion landscape, facilitating authentic cultural expressions that challenge the hegemony of well-established fashion capitals. This ability to promote local narratives through digital means could foster a more inclusive and culturally rich industry, aligning with the growing demand for fashion that resonates on a personal and communal level.

Moreover, digital fashion's potential to curb the fashion industry’s environmental toll is amplified by its inherent characteristics. Since digital garments eliminate the need for raw materials, their production avoids the pitfalls of low-cost, non-recyclable materials. For example, recent evidence suggests that brands are increasingly launching digital-only collections that exist solely in the virtual realm, allowing for dynamic customization without the traditional ecological footprint associated with garment manufacturing and distribution.

Consumer research reveals intriguing trends regarding willingness to pay for e-fashion. Those with a high appreciation for tactile experiences often find allure in digital clothing, despite its intangible nature. This group, which values the uniqueness and personal expression digital fashion can provide, appears simultaneously drawn to the novelty and the ethical implications of e-fashion. Interestingly, individuals who typically prefer to physically inspect garments are demonstrating an unexpected readiness to engage with virtual alternatives. As Sit mentions, “We learnt that, despite e-fashion being inherently virtual and intangible, consumers still emphasise the importance of ‘touching’ the e-fashion.”

However, as the industry navigates this new terrain, challenges remain. Issues like cultural appropriation and the authenticity of digital representations pose potential hurdles that require careful consideration and ongoing dialogue. As digital fashion expands, there is an imperative to balance innovation with cultural sensitivity and ethical responsibility, ensuring that this new frontier serves as a genuine avenue for positive change rather than a mere gimmick for consumerism.

In summary, while the advent of e-fashion presents exciting opportunities for sustainability and cultural expression within the fashion industry, its success will depend on its ability to replace traditional practices rather than exacerbate them. The conversation around digital fashion is still evolving, but its potential to disrupt the conventional norms and practices in fashion while encouraging mindful consumption cannot be overlooked. As the sector moves towards a more digitally focused future, it will be crucial for brands and consumers alike to embrace this transformative moment responsibly, leveraging technology for the good of both people and the planet.

### Reference Map

1. Paragraphs 1, 2, 3, 5, 6, 7: Source 1
2. Paragraphs 4, 8: Source 2
3. Paragraph 3, 4, 6: Source 3
4. Paragraphs 1, 2: Source 4
5. Paragraphs 1, 4: Source 5
6. Paragraph 6: Source 6

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://www.anthropocenemagazine.org/2025/05/virtual-fashion-is-coming-will-it-improve-clothing-sustainability-or-just-increase-consumption/> - Please view link - unable to able to access data
2. <https://www.researchgate.net/publication/389362773_Digital_Fashion_for_Sustainable_Cultural_Diversity> - This research examines the digitalization of the fashion industry, exploring how this emerging paradigm fosters sustainability and cultural diversity among designers. It highlights the democratizing potential of digital tools and technologies in fashion design while addressing the challenges and opportunities they introduce. The study investigates the potential for digital fashion to nurture authentic expressions of cultural diversity, countering the dominance of a few global fashion capitals by developing new local markets and individual fashion narratives within the digital space. A key focus is how virtual fashion enables the exploration of cultural values from individual perspectives rather than generalized norms. This decentralized approach offers an alternative for those who resist conforming to traditional fashion systems. Digital fashion’s implications for cultural identity, inclusiveness, and sustainability are examined, emphasizing its role as a medium for expressing and reimagining cultural identities. The research underscores the need for sustainable practices, advocating for fashion systems that embrace diversity and ecological responsibility. Case studies of key players in digital fashion illustrate the intersection of cultural diversity, sustainability, and innovation. These examples, often outside the elite fashion establishment, demonstrate how digital fashion facilitates a transformation of the traditional system. Through qualitative research methods, the study analyzes the contributions of digital artists and cultural experts, offering empirical evidence of cultural exchange within digital creativity. Given the nascent and often contested nature of digital fashion, the study emphasizes the importance of addressing complex issues such as cultural appropriation and digital representation. This deeper exploration aims to foster sustainable work patterns and new cultural systems, promoting inclusivity and authentic expression in contemporary fashion.
3. <https://phys.org/news/2025-05-virtual-couture-emerges-sustainable-alternative.html> - As fast fashion continues to fill wardrobes and landfills at a staggering pace, new research from the University of Portsmouth suggests that the future of fashion might lie not in fabric, but in pixels. In a multi-study paper published in the International Journal of Retail and Distribution Management, a team of researchers delved into the growing phenomenon of e-fashion—digital garments worn in virtual environments—and found these intangible items could help bridge the gap between fast fashion and environmental sustainability. From Instagram filters to gaming skins, the idea of digital self-presentation isn't new. But fashion brands are now taking things a step further, offering digital-only collections that exist purely on-screen. These clothes can change color, morph shape, and even communicate with physical counterparts via near-field communication (NFC) chips. Crucially, they come without the environmental baggage of traditional production, shipping or waste. Their production, consumption and disposal don't require using raw and difficult-to-recycle materials such as polyester. The research studied how consumers respond to the unique appeal of digital clothing and what drives their willingness to pay for garments they can't physically touch, try and own. Findings show that consumers with a strong appetite for novel and tactile experiences are particularly drawn to e-fashion, valuing its creativity, customizability and interactivity. For them, virtual couture is not a compromise but an additional new frontier in personal style. Conventional logic suggests that consumers with a strong need for touch, who enjoy physically inspecting and trying on a garment, are less likely to find e-fashion appealing. However, the research challenges this logic. It learns that consumers with a high need for touch, and a high sensation-seeking, are an ideal target market for virtual clothing. The research found that consumers could mentally simulate the tactile features of e-fashion, a process that becomes increasingly feasible and vivid with the adoption of virtual reality headsets. One of the co-authors, Dr. Kokho (Jason) Sit, senior lecturer in marketing at the University of Portsmouth, said, "Whether e-fashion is a fleeting fad or a long-lasting trend remains to be seen, but its environmental potential is undeniable. Unlike fast fashion's reliance on low-cost, often non-recyclable materials and landfill-heavy turnover, digital garments can be produced, consumed, and discarded with a single keystroke—or perhaps several keystrokes. No raw materials, modern slavery, shipping and delivery are involved, reducing deforestation, inhumane working conditions, carbon footprint and landfills." "This research shows that e-fashion isn't just a gimmick for gamers or influencers. It can potentially disrupt the fast fashion model in a profitable way for fashion brands, exciting for consumers and better for the planet." While it may not entirely replace physical fashion, the study suggests e-fashion could meaningfully reduce our reliance on high-volume, low-value clothing and help curb the environmental toll of an industry that urgently needs reform.
4. <https://link.springer.com/article/10.1007/s44265-023-00016-z> - The fashion industry is a lucrative market that generates revenue in the trillions through the production and distribution of clothing, footwear, and various accessories. The apparel industry has experienced a remarkable expansion in the past few years, evidenced by a 100% increase in output between 2000 and 2023. The apparel industry makes a substantial contribution to the negative impacts of biodiversity loss and climate change. The fashion industry’s expansion and social and environmental sustainability concerns, catalyzed by digitalization, are propelling it toward a sustainable trajectory. The present review article centers on the primary issues faced by the fashion industry and the utilization of metaverse technologies to tackle sustainability challenges within this sector. The metaverse refers to the amalgamation of physical and digital space within a virtual world, commonly referred to as the meta-universe. The metaverse is a strategy that is anticipated to be employed in fashion e-commerce and retailing, aiming to facilitate consumer decision-making processes, ranging from user experience to customer experience. This approach is expected to confer considerable competitive benefits. This review paper aims to analyze the sustainable impact of the metaverse on the fashion industry and foster discourse among researchers and industry professionals.
5. <https://shine-magazine.com/the-rise-of-virtual-fashion-trends-shaping-2025/> - As the fashion industry grapples with its environmental impact, virtual fashion presents a sustainable alternative. The production of physical garments often involves significant waste, resource depletion, and carbon emissions. In contrast, digital fashion has a much lower environmental footprint, as it eliminates the need for raw materials and reduces manufacturing waste. Moreover, digital fashion can promote sustainable consumption habits. Consumers can purchase digital outfits for their avatars or digital identities without contributing to the overproduction of physical clothing. This shift towards virtual garments encourages a more mindful approach to fashion consumption, aligning with the growing demand for sustainable practices among consumers. Brands are also leveraging virtual fashion to promote sustainability initiatives. Many are launching digital collections that emphasize eco-friendly materials and production methods, highlighting their commitment to reducing environmental impact. By embracing virtual fashion, brands can position themselves as leaders in sustainability, appealing to the conscious consumer of 2025.
6. <https://ecoskills.academy/4-key-drivers-of-sustainable-fashion-in-2025/> - While there is still significant progress to be made in textile-to-textile recycling, for instance, the Circ company is utilizing its technology to recover and reuse both cotton and polyester fibers into like-new textiles. Circular solutions are scaling up in regional and recycling hubs by utilizing AI-powered technologies that create new manufacturing ecosystems, supporting traditional and circular production models. We anticipate groundbreaking innovations that will advance sustainable fashion in 2025. Virtual try-on technologies have already become a game-changing solution as they allow customers to virtually try on apparel, makeup, and other fashion products before they proceed to payment. Augmented reality and machine learning, or AI, replicate the in-store fitting experience. Most fashion brands have reported impressive results by using virtual try-ons and an increase in sales. However, the benefits extend beyond the measurable enhancement of customer experience and sales; in terms of sustainability, this technology eliminates the environmental footprint and waste that often arises from returns.