DIGITAL AND SUSTAINABLE FASHION: ALIGNING AUGMENTED REALITY, VIRTUAL REALITY AND 3D SIMULATION WITH THE SUSTAINABLE DEVELOPMENT GOALS

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Study purpose
This study examines how digital and immersive technologies, augmented reality, virtual reality, virtual try-on and 3D simulation, contribute to sustainability in fashion retail, and seeks to align these technological innovations with the United Nations Sustainable Development Goals.

Relevance / originality
The article proposes an integrative framework linking five thematic areas to the SDGs, extending prior reviews by covering publications to 2026, broadening the technologies considered, and mapping findings explicitly to individual SDGs, offering contributions for researchers, policymakers and practitioners.

Methodology / approach
A systematic literature review was conducted under the SPAR-4-SLR protocol, analysing 50 articles published between 2015 and 2026 and indexed in the Web of Science and Scopus databases, followed by content analysis to identify thematic groups.

Main results
Content analysis identified five thematic groups. These technologies reduce returns and textile waste, increase fit accuracy, foster circular practices, and strengthen consumer trust, contributing mainly to SDGs 8, 9, 12 and 13; key barriers include privacy concerns, implementation costs and uneven adoption.

Theoretical / methodological contributions
The study contributes an integrative framework linking five previously fragmented research streams, digital design, consumer behaviour, sectoral reviews, virtual try-on and digital transformation, to the SDGs, together with a feedback-cycle proposition connecting technological innovation to sustainability outcomes across the fashion value chain.

Social / management contributions
Findings suggest fashion retailers should prioritise virtual try-on and body-fitting solutions, given their comparatively strong empirical support for reducing returns, complemented by transparent data-protection policies that sustain consumer trust, while policymakers can use SDG mapping to target support toward digital sustainability initiatives.

Keywords: Augmented Reality, Sustainable Fashion Retail, Sustainable Development Goals, Virtual Reality, Virtual Try-On