

An Exploratory Study on How Fashion Brands Can Leverage AI-Driven Accessibility Strategies to Enhance Disability-Inclusive Shopping Experiences in the UK

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Fashion should be for everyone, yet disabled consumers continue to face exclusion. This study explores how artificial intelligence can help bridge this gap, fostering accessibility and inclusion in fashion retail.

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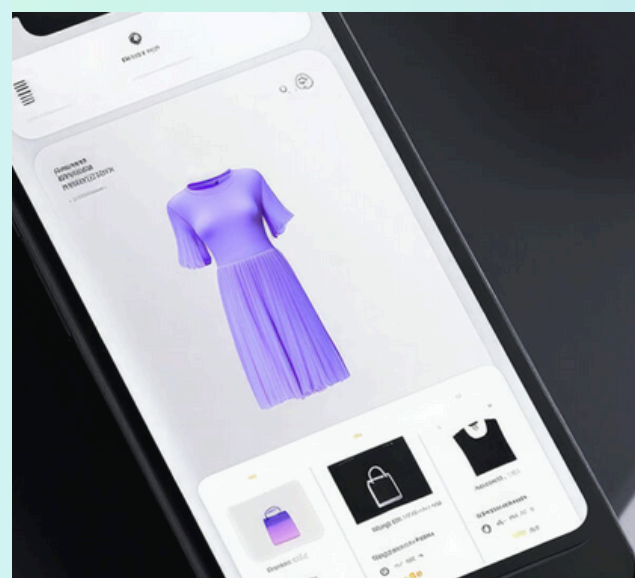
01. Introduction

Fashion is often celebrated for diversity, yet disability remains marginalised in both design and retail practice. In the UK, over 16 million people (24% of the population) live with disabilities, representing a significant but underserved consumer group whose purchasing power—the “Purple Pound”—is estimated at £274 billion annually. Despite emerging adaptive collections, disabled consumers still face barriers in both physical and digital fashion spaces, limiting independence, inclusion, and self-expression.



London Fashion Week September 2023 (UNHIDDEN,2023)

At the same time, artificial intelligence (AI) is reshaping retail through tools such as virtual try-ons, recommendation systems, and personalised interfaces. However, its potential to advance accessibility remains underexplored.



This study investigates how AI-driven accessibility strategies can enhance disability-inclusive shopping experiences in the UK, offering insights for both academic debate and practical retail innovation

02. Rationale

Despite progress in disability rights, disabled consumers remain disadvantaged in retail, facing inaccessible stores, limited adaptive options, and tokenistic inclusion. Fashion is not only functional but central to identity and self-expression, yet current approaches often marginalise disabled individuals. AI offers promise through personalisation, virtual try-ons, and assistive tools, potentially reducing barriers and fostering inclusion. However, access to such technologies is limited, and bias risks reinforcing exclusion.

This study addresses a gap at the intersection of disability studies, fashion retail, and AI, contributing theoretically by extending debates on inclusive design and practically by offering strategies for brands to harness AI as an enabler of accessibility and equity in fashion retail.

03. Aim

This study aims to explore how artificial intelligence (AI) can be integrated into accessible fashion retail strategies to enhance the shopping experiences of disabled consumers in the UK: encouraging more inclusive retail frameworks and increasing awareness of the issues regarding accessibility among wider consumer bases.

04. Literature Review

1. Fashion Retail Environment

- Digital/AR enhance shopping (Heinonen & Strandvik, 2020);
- Industry 5.0 supports sustainability (Xu et al., 2021).
- Fast fashion harms society/environment (Perry & Wood, 2019);
- Omnichannel costs & digital divide (Ferne & Sparks, 2019).

3. Inclusive Design Practices

- Adaptive design promotes independence (Priya, 2024)
- AI improves fit & testing (Jin & Shin, 2020).
- Standard sizing excludes (Lee et al., 2023);
- Adaptive clothing costly/complex (Husband, 2023).

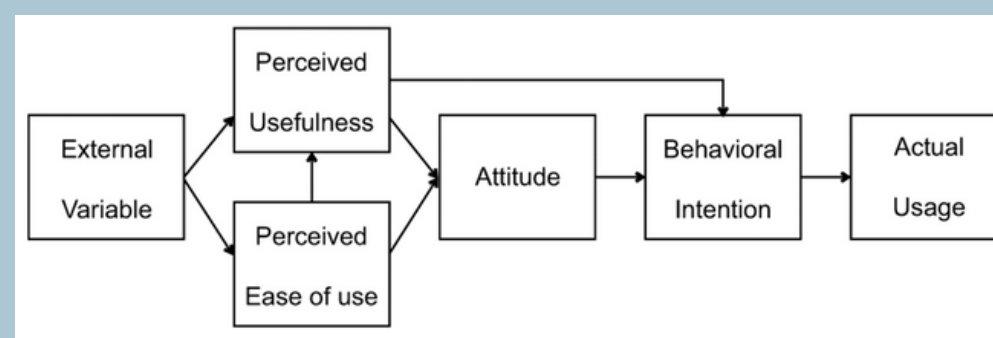
2. Accessibility and Disability in Fashion

- Fashion empowers identity (Venkatesan, 2025);
- Disabled models boost inclusivity (Wang & Zhuang, 2024).
- Marginalisation in design/representation (Kim et al., 2025);
- Limited products & high costs (Mohammed et al., 2024);
- Online barriers (Leinonen et al., 2024).

4. AI in Accessible Fashion Retail

- Limited inclusivity & accuracy (Goti et al., 2023);
- Privacy & trust concerns (Morr et al., 2024).
- Voice assistants aid accessibility (Villegas et al., 2023)
- Personalisation & VTOs increase confidence (Guo et al., 2023).

Theoretical Framework: Technology Acceptance Model (TAM)



Technology Acceptance Model (Davis,1989)

06. Findings and Analysis

Barriers in Fashion Retail

- Physical**
inaccessible entrances, narrow aisles, small fitting rooms, overstimulating stores.
- Online**
poor navigation, low assistive tech support, limited adaptive products.

AI's Current Role

- Limits**
chatbots often misunderstood queries, frustrating users. Limited capability reduced efficiency.
- Potentials**
smarter voice assistants, AI for search/filter/recommendations.

Desired Features in Future AI

- Autonomy**
less reliance on family/assistants, independent shopping, virtual try-ons, easier returns.
- Inclusion**
accessibility filters, inclusive design, community-driven guidance.

Evaluation of AI Usability, Trust & Privacy

- Concerns**
fears of bias and exclusion remained; privacy risks and data misuse were key worries.
- Policy Support**
Consumer Rights Protections, ease of use, transparency, Legal Frameworks of Accessibility

05. Methodology

Research Philosophy & Design

- Approach: Qualitative, interpretive, inductive design. (Based on the research onion)
- Framework: Technology Acceptance Model (TAM) guides exploration of disabled consumers' views on AI in fashion retail.
- Strategy: Focus groups chosen to capture collective and individual experiences

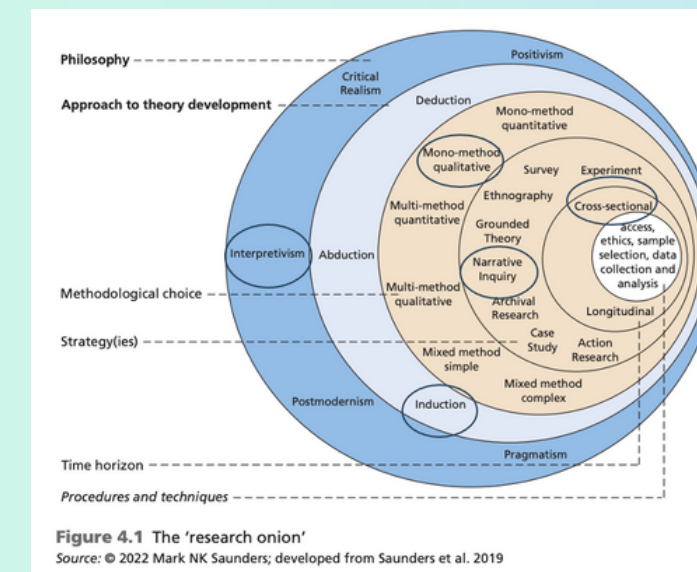


Figure 4.1 The 'research onion'
Source: © 2022 Mark NK Saunders; developed from Saunders et al. 2019

The Research Onion (Saunders et al., 2023)

Limitations

- Small sample size (2 groups) limits generalisability.
- Cultural variation may shape perspectives.
- Online format limited non-verbal observation.
- Recruitment risked self-selection bias.
- AI tools were supportive only, not analytical

07. Conclusion



Conceptual Framework of AI-Driven Accessible Fashion Retail Experience

This study explored how AI can enhance accessibility and inclusion in UK fashion retail for disabled consumers. It revealed persistent physical and digital barriers but also highlighted AI's potential to foster autonomy, inclusive design, and better retail experiences. By extending TAM with trust, privacy, and inclusivity, the research contributes both theoretically and practically, offering brands strategies to engage the “Purple Pound.” Ultimately, AI is not a standalone solution but a catalyst for more equitable and inclusive fashion retail