

Exploring Apparel Websites' Compliance to Digital Accessibility Laws: Product and Navigation Content Faced by People with Visual Impairments

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The rise in switching from offline to online shopping after the COVID-19 pandemic highlights the need for a critical review of apparel website design to ensure digital accessibility exists for all people, including people with visual impairments (PVI). People with visual impairments are those with low vision or blindness categorized by the level of visual acuity and visual field (CDC, 2022; Kleynhans & Fourie, 2014). PVI require an alternative strategy to access information on apparel websites through assistive technology (AT) which provides human interface to the website's alternative text in various modalities, such as screen readers and linear navigation. Meanwhile, Title III of the American Disabilities Act (1990) requires businesses open to the public to provide effective and nondiscriminatory communication through digital accessibility which centers on access to products, resources, and services across hardware and software in the digital spaces of apparel retailing (Lazar et al., 2015). However, many apparel websites are not compliant to the Web Content Accessibility Guidelines (n.d.), and limit PVI's ability to access apparel. In fact, the United Nations (2021) declared access to published digital content as a basic human right. Therefore, the study aimed to explore the challenges PVI face accessing informational content through AT and apparel website design.

Culnan's (1985) perceived accessibility was used as the theoretical framework where physical, interface, and information dimensions evaluate access to the source or system. As the first step in this topic, we focused on the *information* dimension of accessibility in this study. The information dimension focuses on the ability to retrieve information independent of any subsequent judgement as to the item's relevance (Culnan, 1985). For PVI to retrieve the proper product information they need to purchase apparel, website content must be communicated through the limited functions of AT, such as screen readers and linear navigation. However, we know little about how apparel websites communicate product content and navigation information from the PVI perspective, and whether it is facilitated in a nondiscriminatory and digitally inclusive way. To fill this gap, the study raised two research questions: (a) how does online apparel retailing website content communicate product information to PVI while using AT? and (b) how does such content communicate navigation information to PVI while using AT?

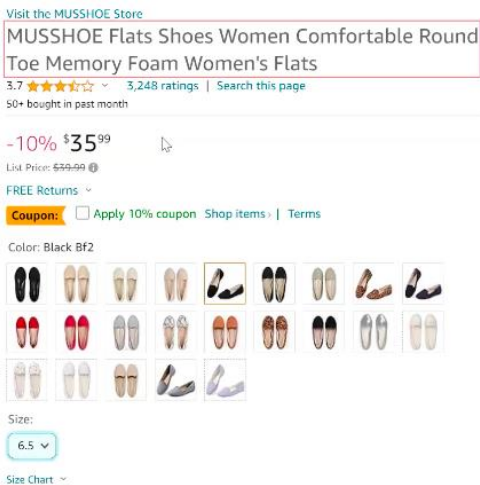
Upon approval of IRB (#2099807), we conducted one-on-one task observations and semi-structured interviews with eight female participants in their 20s to 60s each lasting more than 45 minutes. In Spring 2024, participants were recruited via purposive and snowball sampling through the researcher's personal connection. Six out of eight participants shared they are legally blind, and two shared they have low vision. All eight participants shared that they had their own experiences in e-commerce apparel shopping. During the task observation, participants were tasked to browse Amazon Fashion with their chosen AT for an apparel item and compatible accessory, share their screens, and select their items. Amazon was chosen due to its prevalence in the society, notable accessibility standards, and user-driven technological advancements (Akhtar

et al., 2022). Semi-structured interviews followed including questions about AT and website content barriers and challenges to gain product information. The study data was thematically analyzed within the theoretical framework. Two researchers reached a unanimous agreement regarding the participants' statements and interview data codes.

The data analysis generated five sub-themes that were coded into two overarching themes that aligned with Culnan's informational dimension of perceived accessibility: (a) product information and (b) navigation information (see Figure 1). All participants identified issues with product information and website meta descriptions, in terms of color, size, and header content. For example, the color fuchsia was pronounced by AT as "fuh-shuh," and confusion surrounding numbers attached to color names, such as "Black Bf2." Similarly, size chart infographics were not accessible with AT screen reading functions. In reference to header content, Participant 7 stated, "I've noticed the long string of words you need in order to make an item more findable. Those phrases make it more difficult to find what you're looking for." Five out of eight participants identified issues with confusing and unclear content surrounding navigational information, in terms of reviews, and all participants identified navigation issues for customer service. For example, Participant 8 spent *up to 5 minutes* navigating to the reviews section to read two reviews for one apparel item. When asked about customer service, Participant 6 laughed and stated, "*it's a pain.*" Similarly, Participant 2 sighed and stated, "*it's difficult to find.*"

Figure 1. Examples of Participants' Screen Images by Theme

Product Information: *Color, Size, & Header Content* as identified in text in the meta description on webpage.



Visit the MUSSHOE Store

MUSSHOE Flats Shoes Women Comfortable Round Toe Memory Foam Women's Flats

3.7 ★★★★★ 3,248 ratings | Search this page

50+ bought in past month

-10% \$35.99

List Price: \$39.99

FREE Returns

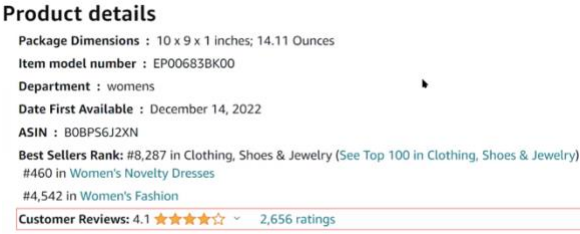
Coupon: Apply 10% coupon Shop items | Terms

Color: Black Bf2

Size: 6.5

Size Chart

Navigation Information: *Review Section & Customer Service* as identified through website header navigation and AT linear navigation



Product details

Package Dimensions : 10 x 9 x 1 inches; 14.11 Ounces

Item model number : EP00683BK00

Department : womens

Date First Available : December 14, 2022

ASIN : B0BP56J2XN

Best Sellers Rank : #8,287 in Clothing, Shoes & Jewelry (See Top 100 in Clothing, Shoes & Jewelry)

#460 in Women's Novelty Dresses

#4,542 in Women's Fashion

Customer Reviews: 4.1 ★★★★★ 2,656 ratings

Overall, the findings highlighted the unmet website meta descriptions for product information and linear navigation functionality for AT, and therefore, negatively impact digital accessibility for PVI to shop online for apparel –resulting in apparel websites lack of compliancy with Title III of the ADA (1990). The findings highlight the need for an inclusive approach to apparel

website design for digital retailing with effective and nondiscriminatory communication of product and navigation information to overcome the barriers in the digital landscape for PVI. Future research implications include additional user testing of apparel online retailing websites to build on the meta description content barriers identified here and to further explore the market potential of an inclusive formula for website landing pages to increase communication efficiency between retailers and PVI consumers which will benefit all consumers.

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