

**Exploring the Role of Universal Design in Promoting Awareness of Sustainability**

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## **Introduction**

A prevalent issue with the current fashion industry, amounting to an estimated \$62.4 billion is dissatisfaction with fit. 64% of all returns are due to incorrect fit. The dissatisfaction originates because each company and brand uses its own methods to size and grade, not adhering to a national or international sizing standard (Kosinski, 2019). Some brands will size their garments using vanity sizing. Vanity sizing is defined as the practice of labeling clothing with sizes smaller than the item's measures and industry standards would indicate (SizeCharter, n.d.). Companies only aim to accommodate 65% - 80% of each sample population grouping, leaving 20% - 35% of individuals from each sample population grouping underrepresented. One of those population groups is the disabled population. People living with disabilities do not always have the option to wear the clothing of their choice, usually as a result of accessibility, fit/comfort, or ease of dressing of the desired clothing. Thus, people living with disabilities may have a compounded effect of not looking like the general population and also not dressing like the general population. This situation may cause barriers to social participation as a direct result of their appearance (Kosinski, 2019).

Universal design is a concept that is gaining traction in the fashion industry as more and more designers are recognizing the need for inclusive and accessible clothing options. Universal design is the process of creating products that are accessible to people with a wide range of abilities, disabilities, and other characteristics (The University of Washington, 2022). This can be anything ranging from people with disabilities, different body types, or different age groups. The two objectives of this research are, (1) to explore the impact of universal design on consumers, and (2) to investigate the connection between universal design and the awareness of sustainability.

## **Literature Review**

### **History and the Evolution of UDL**

In 1997, Ron Mace from North Carolina State University created universal design to make sure that the design of products and environments would appeal to all people but also meet the Americans with Disabilities Act (ADA) requirements (OCALI, 2023). Since 1997, universal design has developed to take into account not just physical function but also other factors that promote well-being in our increasingly socially progressive and technologically advanced era. That being said, universal design has evolved to prioritize human-centered issues and social

inclusion (Tauke, 2019). Universal design refers to a design approach that prioritizes social inclusivity, avoids discrimination, and promotes equal opportunity and personal empowerment. In essence, designs that embody these principles are considered universally designed.

In 2012, researchers from the Center for Inclusive Design and Environmental Access (IDeA Center) at the University of Buffalo, State University of New York met and created the eight goals of Universal Design. Those goals are as follows: (1) Body Fit, (2) Comfort, (3) Awareness, (4) Understanding, (5) Wellness, (6) Social Integration, (7) Personalization, and (8) Cultural Appropriateness. The initial four goals are aimed at enhancing human performance, with each one concentrating on one of the four categories of universal design knowledge: anthropometry, biomechanics, perception, and cognition. The wellness goal covers both human performance and social involvement. The final three goals prioritize social participation and identity concerns as essential elements of design (Tauke, 2019).

### **What is Universal Design?**

The following universal design principles were developed at the Center for Universal Design at North Carolina State University by a team of architects, product designers, engineers, and environmental design researchers to serve as guidelines for the creation of environments, communications, and products. (1) Equitable Use, (2) Flexibility in Use, (3) Simple and Intuitive Use, (4) Perceptible Information, (5) Tolerance for Error, (6) Low Physical Effort, and (7) Size and Space for Approach and Use (The University of Washington, 2022). With these principles, designers and other creators can more easily design for those that would benefit from universal design. Universal design includes products that cater to everyone regardless of size, disability, gender, sex, etc.

### **Design for Inclusivity**

#### ***The Fight for Adaptive Fashion: How People with Disabilities Struggle to be Seen***

Disabled people constitute the largest minority group in the world, yet are the most underserved and underrepresented. If one does not design for accessibility, it is as if you're telling every fourth person that comes through your door that you don't want their business (Haines, 2021). Shopping for clothes can present significant difficulties for individuals who do not fit into the ableist and straight-sized norm, due to factors such as brick-and-mortar stores without wheelchair accessibility or limited options on e-commerce platforms. This situation represents a missed chance for businesses that prioritize profit, as the disabled population makes

up a quarter of adults and possesses a spending power estimated at \$490 billion in the United States alone.

“Adaptive”, “functional”, and “design for disability” are labels all used to describe clothing designed for people living with disabilities and other impairments. Adaptive clothing can be traced back to the early 1930s when clothing began to be used as a rehabilitative tool. Then as World War II veterans began returning home from war with permanent injuries, records show that loved ones started adapting previously owned clothing to fit the physical needs of the vets. This trend continued and popularized as the years went on, as is evident with the increase in academic research on adaptive clothing and disability. Moreover, as disability and adaptive clothing research continued, medical pamphlets, books, and flyers began being distributed with the aim of advising home sewers on how to adapt commercial clothing to an individual living with a disability. Additionally, academic researchers began recording adaptive clothing preferences and stating potential changes to ready-to-wear clothing. This increase in published materials showed a deficit in the commercial availability of clothing for the disabled.

An example of a design barrier is people living with Down syndrome. People living with Down syndrome may have physical and intellectual characteristics different from the general population. As a result of their low muscle tone and reduced motor skills, they may have difficulty manipulating fasteners on clothing, such as buttons and zippers. In addition, people living with Down syndrome may be proportionately different in height and weight than the general population. These physical characteristics can cause challenges when trying to find appropriate clothing.

The introduction of adaptive clothing into the fashion industry has faced some difficulties. Nike launched the Go Flyease shoe in February 2021 as a limited release for select members but it prompted resellers to purchase and sell the shoe at a higher price, despite its potential benefit to those who need it. According to Helya Mohammadian, founder of adaptive underwear brand Slick Chicks, Nike’s execution was poor, as the shoe was not made readily accessible to those who could benefit from it the most. Many individuals who could have used the product did not have access to it. Similarly, Keely Cat-Wells, founder and CEO of disabled talent agency C Talent and Zetta Studios, expressed disappointment, saying that while Nike designed something with the adaptive community in mind, they did not provide access to the product (Haines, 2021).

Consumers have also criticized the marketing of the shoe, arguing that Nike is capitalizing on disability and using it as a marketing tactic. They argue that Nike is not doing enough to truly prioritize accessibility and inclusivity and that the release of the Go FlyEase shoe is more of a PR move than a genuine commitment to inclusivity. This criticism is indicative of the larger stigma and discrimination that the disabled community still faces. Disability advocates urge society and brands to stop being afraid of them using the term “disabled” and to make people with disabilities more visible in media and advertising. These advocates believe that fashion houses like Nike have a responsibility to shift the narrative and promote inclusion, given their global influence and resources (Haines, 2021).

### ***Two-Thirds of People Struggle to Find Items to Fit Their Body Size Needs***

In 2022, a survey was conducted involving 1,000 Americans weighing 250 lbs. or more and 1,000 Americans weighing less than 250 lbs. The results showed that 74% of all respondents feel frustrated when searching for products that cater to their needs. Individuals weighing 250 lbs. or more expressed feeling embarrassed (59%) and isolated (53%) while shopping, whereas those weighing less than 250 lbs. tend to feel disappointed (51%). However, respondents weighing 250 lbs. or more were more optimistic (35%) compared to those weighing less than 250 lbs. (23%).

On average, respondents have eliminated five brands or retailers that do not cater to their physical needs. Those weighing 250 lbs. or more eliminated between three and eight stores (72%). More than half (53%) of those weighing 250 lbs. or more believe their lives are more challenging than those who are “normal sized”. However, almost half of the respondents (44%) frequently make light of their struggles by practicing positive self-talk, such as reminding themselves that they are beautiful, special, and impeccable. They also remind themselves that if this is their biggest problem in life, they are doing just fine (SWNS, 2022).

“We believe and support being body positive, in body acceptance, and in making positive life choices,” noted Jeff Brown, President of Big Fig Mattress. “Bigger figured people deserve the same level of quality products and choices as everyone else. It’s important to accept that all bodies are different and require more from product manufacturers, and I think the data makes that clear” (SWNS, 2022).

### ***Why Focus on Universal Design?***

An example of the application of universal design in the fashion industry is a clothing brand selling clothing in sizes ranging from 000 to 40 for women's sizes and 24-58 for men's sizes. Universal design is an important process for many reasons ranging from legal to ethical, economic, and practical. These are all driving motives for executing and exploring the impact and value of universal design as a method for design (ACCESS-ed, 2011). Everyone should have the opportunity to express themselves through their clothing choices and feel comfortable and confident in what they wear, regardless of their physical abilities or limitations, which is why universal design is so important. By implementing universal design principles in fashion, designers can create products that are more functional, comfortable, and accessible to a broader range of individuals, promoting a more inclusive and honest society. Moreover, universal design presents an opportunity for innovation and creativity in the industry, as designers are challenged to think outside the box and create clothing that is both functional and fashionable for a wider range of individuals.

### **Inclusivity on The Runway**

High fashion is all about exclusivity, perhaps most evident at the seen-or-be-seen, invite-only fashion weeks in New York, Paris, and more. But can an industry that's all about being exclusive find a way to be inclusive when it comes to diversity? The fashion industry has a foundation on ideals of exclusivity and aspirations that still remain but changing consumer desires have called people to question why. That 'why' has allowed models like Iman, Naomi Campbell, Winnie Harlow, Ashley Graham, and Madeline Stuart to change perceptions of what runway models could look like. Figure 5.1 shows Ashley Graham on a runway at the 2015 New York Fashion Week for Addition Elle (E! Online, 2020). Ashley collaborated with the brand on a line of lingerie pieces. Even now, having models of different races, sizes, abilities, or age isn't necessarily revolutionary, but it hasn't become the standard for fashion weeks around the globe either.

**Figure 1: Ashley Graham for Addition Elle at 2015 NYFW. (E! Online, 2020)**



Runway inclusivity isn't even close for models with disabilities. Both New York Fashion Week and London Fashion Week are at the front of inclusivity with several shows featuring models with visible disabilities. Bri Scalesse, who appeared in three shows for New York Fashion Week, stated "They genuinely cared about true inclusivity and not a moment of just someone on their runway shocking people." Even then, there are still very few shows that feature models that have disabilities or even plus-size models. "Many people in the industry aren't always thinking about models with disabilities when they cast under the guise of diversity. The industry thinks it's okay to not have a single disabled person in your show. No one's gonna bat an eye and that's really hard", says Scalesse (Ushe, 2022).

"Some feel the industry is actively shutting out the disabled community because of the perception that they "would ruin their look as a high-end brand," says model Roisin Clear. "But

the whole idea of a look of a high-end brand is highly exclusive... it's inherently ableist" (Ushe, 2022). An example of this is the Victoria's Secret Fashion Shows. L Brands, the parent company of the lingerie brand, announced in 2019 that the Victoria's Secret Fashion Shows would be canceled until further notice due to a decline in viewership. Moreover, they stated they wanted to focus more on the marketing of Victoria's Secret. Many people believe that the shows were canceled due to what Ed Razek, the then-chief marketing officer, said the year before. He had to publicly apologize after saying that transgender models should not be cast in the fashion show because "the show is a fantasy" (Gajanan, 2019). Victoria's Secret recently announced in March of 2023 that they would be hosting their first show after their four-year hiatus. Victoria's Secret CFO Timothy Johnson confirmed in a statement: "We're going to continue to lean into the marketing spend to invest in the business and also to support the new version of our fashion show, which is to come later this year." Johnson also hinted at the show's focus saying that it will "reinforce our commitment to championing women's voices and their unique perspectives" (Davis, 2023).

Moreover, India is showcasing inclusivity and diversity, which is no more a trend but a necessity to depict current statements. One can see plus-sized models, short models, and non-binary models in their fashion weeks. India presents clothes that are modular, transformable, gender fluid, ones where buttons can be ditched for the disabled, more conscious, and personable. It can be easily said that fashion in India caters to more than just costumes, cuts, and aesthetics. It goes over and beyond to cover various social, cultural, and communal disorders that riddle the country and the world at large (Danial, 2022).

### **Digital 3D Fashion Designers: Cases of Atacac and The Fabricant**

Some of the benefits to consumers include increased comfort, fit, accessibility, and user satisfaction. This can all be achieved through technology. One of the ways that universal design is applied to the fashion industry is also through technology. Digital 3D fashion can increase the sustainability and accessibility of universal design. Moreover, digital 3D fashion eliminates a lot of the limitations of traditional fashion design such as the time and resources required to create physical prototypes and the waste generated by producing multiple samples. With 3D scanning, businesses can see what a garment would look like on someone and this can increase inclusivity because companies wouldn't have to waste materials on prototyping sizes they do not carry yet. Late developments in the area of garment-specific 3D software have given possibilities to



digitalize the traditional fashion design processes and virtualize fashion imagery, products, and spaces. Ethical, economical, and creative controversies in the fashion industry have shoved new designer generations to search for alternative ways of providing clothing and fashion experiences that waste fewer resources, turning to experimentation with service models, production methods, and technologies (Särmäkari, 2021). Some designers rely on digital fashion to not only create digital prototypes and samples but also digital-only fashion collections. Not only can they see how it would look physically on a body, but they can see the aesthetics and design characteristics of it too.

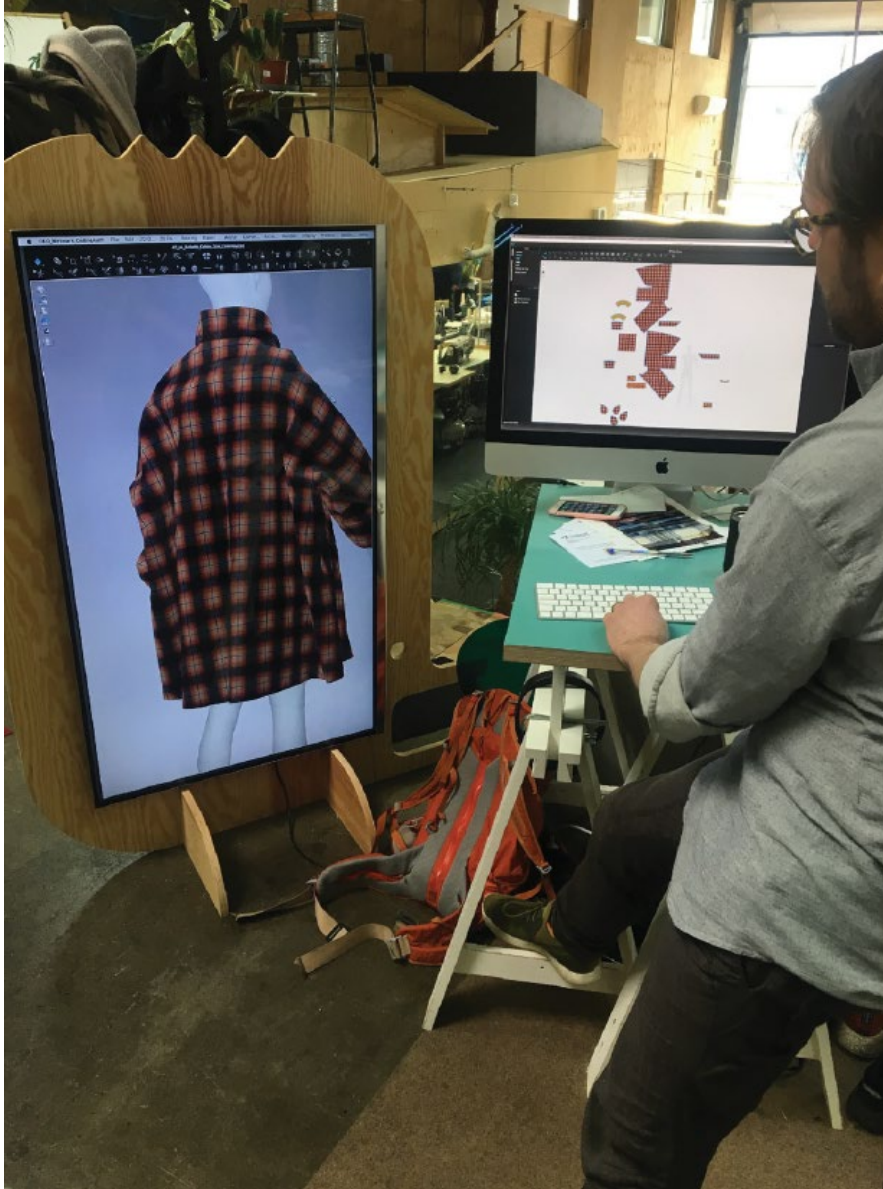
Digital fashion has slowly been catching wide media attention, especially due to the COVID-19 pandemic that forced companies to digitize their processes and user experiences. Digital fashion is a way for self-expression and a long-awaited answer to the overproduction and generic offerings of the fashion industry. Virtual representations and 3D Design are nothing new to other industries such as industrial design, architecture, animation, and game design. Still, it is fairly new to the fashion industry and its 2D digital toolset. The fashion industry has used 3D design to create better soft material simulation techniques, real-time garment animation, interactive design systems, and hyper-realistic digital 3D draping, resulting in increasingly popular virtual draping software developed with and for fashion designers. Software such as Browzwear and CLO3D simulate the behavior of the garment on a moving avatar, merging patternmaking, imagery production, and fashion design (Särmäkari, 2021).

There have been explorations to see if it is possible to merge digital 3D fashion and sustainability and inclusivity. Some examples include localization of garment production, designing for disabilities, realistic 3D Design for the on-demand models, and zero-waste designs. Digital 3D fashion is also addressed in research on producing virtual fashion experiences, such as the tactility of digital textiles, virtual fittings, and design for social games. The brand, Tribute Brand, has started to use more digital technology in its processes. They tailor digital-only 3D garments on photographed bodies as “phygital” AR experiences that mix the physical and digital worlds (Särmäkari, 2021).

Atacac, founded in 2016, is a Swedish company that was created by a fashion designer and researcher named Rickard Lindqvist and a digital creative named Jimmy Herdberg. Atacac uses the kinetic garment construction theory in its processes. The kinetic garment construction theory proposes an alternative pattern-cutting model based on balance directions, key

biomechanical (motion, force, momentum, levers, and balance), and a draping method that challenges the stagnant model of a still figure and the fundamental relationship between dress, garment construction, and the body, working from the body outward. Atacac also created a process where sales happen largely before production, and the garments are shown virtually before sampling. The preordered garments are produced mostly on-demand in their in-house micro-factory. To reduce costs, Atacac will have the consumer purchase the garment early and because of this, the less it will cost. Since inventory is expensive to have in a warehouse, keeping the inventory minimal, will ultimately save costs (Särmäkari, 2021). Figure 4.1 shows Richard Lindqvist working on a computer screen modifying a pattern in CLO3D while also looking at a human-sized screen showing the visualization of the garment.

**Figure 4.1: CLO3D and Visualization of a garment side-by-side, (Särmäkari, 2021).**



The Fabricant was founded at the beginning of 2018 by Kerry Murphy who is a filmmaker and visual effect specialist who has worked in advertising as well. The Fabricant has positioned itself between fashion and technology, being the first “Digital Fashion House” that makes digital-only clothing, and “wastes nothing but data and exploits nothing but imagination.” The Fabricant wants to change the fashion industry and the idea of fashion being mostly materialistic and reduce the environmental impact by eliminating manufacturing. The design process at The Fabricant is pretty simple. The Fabricant starts from the vision of a client, and a storyboard. Then the garment design process begins draping on an avatar or, in the case of a client project, from visualization based on provided tech-packs, flat drawings, and photos or

examination of physical garments. The end products end up consisting of the digital garment, the story, and the digital experience, merging fashion design and animated film. Moreover, The Fabricant is developing a fashion platform called Leela that they hope to be their main business in the future. In 2020, they tested the beta version of Leela, which is intended for sharing, showing, and selling their designs and other companies' digital garments. The users will have avatars that can wear the garments on the platform (Särmäkari, 2021).

### **Adaptive Fashion: Clothing Participation Barriers**

Today's clothing market is still not acclimated enough for those with bodies that go against the societal norm. As ready-made clothing is taking over the market, it is getting more and more difficult for consumers to find clothing that fits their needs. To make it worse, prices are rising which is making it more difficult for people to afford clothing that will work for them. The lack of adaptive or appropriate clothing for people living with disabilities can become a barrier, preventing engagement in meaningful activities, yet these barriers are not often explicitly identified. There is a lack of support and research from the fashion industry on universal and adaptive design, however, there has been a rise in the availability of adaptive fashion over the most recent years (Greenfield, 2019).

In 2016, Alison Kabel conducted a study to investigate the barriers that disabled people were experiencing with clothing. This study resulted in half of the participants reporting that they did not partake in an activity due to not having the right or accessible clothing to wear for it. Two-thirds of respondents reported that this was a common problem in their lives. Such activities included jobs, school, exercise, and social or family gatherings. Because of this, respondents reported that this negatively affected their mental and physical health. Because of this study, it was established that inadequate clothing can greatly affect the quality of life of disabled individuals, hindering their active engagement in daily activities.

As time goes on and more people are realizing the issue with the fashion industry, more brands and designers are starting to create adaptive lines and curate their clothing so that everyone can wear them. Furthermore, disabled people and designers are beginning to work together and are collaborating to change the fashion industry for the better. Overall, as long as adaptive clothing items are accessible to those who need them and remember that accessible fashion benefits everyone, then the fashion industry will change for the better.

### **Universal Design in Promoting Sustainability**

The design approach for universal design promotes not only inclusivity but sustainability as well. There are four main ways that this approach can be used to promote sustainability. (1) Reducing Waste. Universal design promotes the creation of clothes that can be worn for longer periods, as they can fit a wider range of body types and ages. This reduces the need for frequent replacements, which leads to less clothing waste in landfills. The current system for producing, distributing, and using clothing operates on a predominantly take-make-dispose model. High volumes of non-renewable resources are extracted to produce clothes that are often used for only a short period, after which the materials are largely lost to landfills or incineration (Ellen MacArthur Foundation, 2017). (2) Minimizing Overproduction. Universal design encourages the creation of garments that can be used for multiple purposes, such as a dress that can also be worn as a tunic or a skirt. This reduces the need for creating new garments, which reduces overproduction and overconsumption. (3) Promoting Ethical Manufacturing. Universal design promotes the use of ethical manufacturing practices, which ensure that workers are treated fairly and paid a living wage. This also helps to reduce the negative environmental impact of manufacturing, as factories are encouraged to use sustainable materials and practices. (4) Creating Timeless Styles. Universal design emphasizes the creation of timeless styles that are not dictated by fast-changing trends. This encourages consumers to invest in clothing that will last longer, reducing the amount of clothing that is discarded after only a few wears.

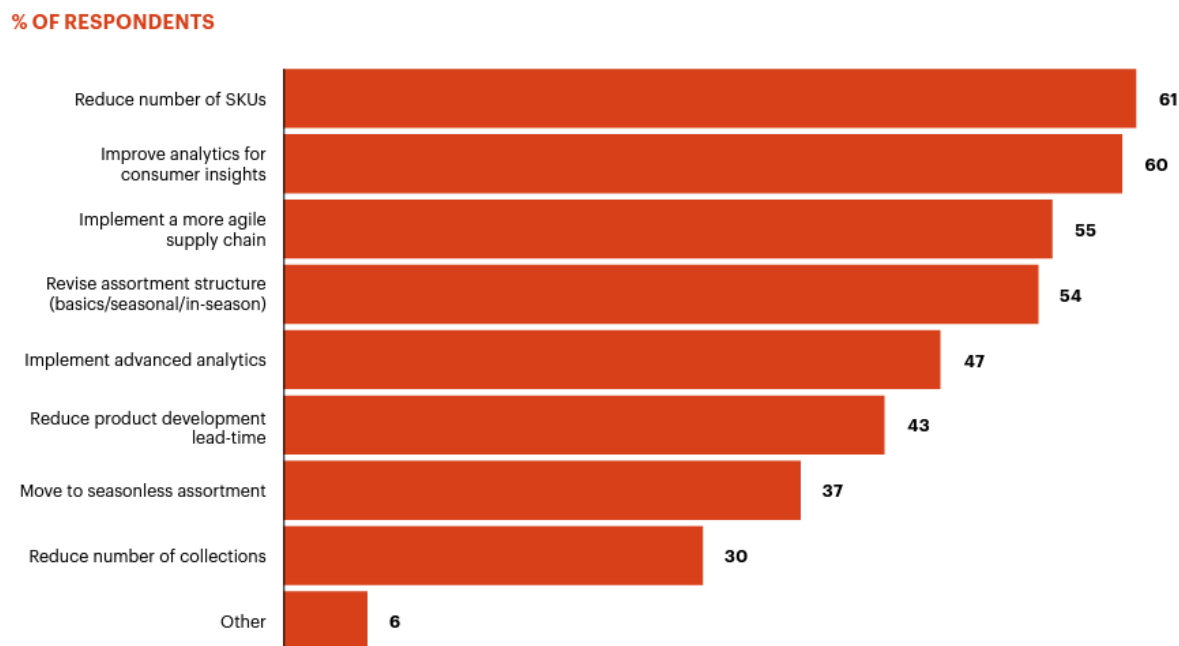
COVID-19 brought to light that more products and collections do not necessarily yield better financial results and it highlighted the need for a shift in the profitability mindset. Companies need to reduce complexity and find ways to reduce inventory levels by taking a demand-focused approach to their assortment strategy while facilitating flexible in-season reactivity for both new products and replenishment (McKinsey & Company & Business of Fashion, 2020). Because of the pandemic, there is now an excess of inventory in warehouses that companies are stuck with and they do not know what to do with it. Figure 2.1 shows a graph explaining the different ways that fashion executives plan to employ several strategies to avoid overstock in the future.

The trend of fast fashion is discouraging not only sustainability but universal design as well. Many people will only purchase fast fashion for the trend of something or because it's cheap, but this is not helping overproduction or the problem of textile waste. Even if these products were able to be worn by everyone, they are not durable enough to last a long time. This

is why universal design is so important. Not only can everyone wear clothing that is universally designed, but it is durable, will last a lifetime, and is accessible to everyone.

**Figure 2.1: (McKinsey & Company & Business of Fashion, 2020)**

## Fashion executives plan to employ several strategies to avoid overstock in the future



SOURCE: BOF-MCKINSEY STATE OF FASHION 2021 SURVEY

## Case Studies

### Unhidden

Founder Victoria Jenkins founded Unhidden after an encounter with a woman with cancer that changed the course of her life. She then researched online about adaptive clothing and could not find anything that was size inclusive but at the same time, something that was accessible for everyone. After a long time of researching, sampling, and prototyping, she founded the brand in 2020 and now sells sustainable, adaptive clothing with a large size range. Unhidden sells tops, trousers, and dresses. Their clothing sizes range from 2XS to 6XL in various garments. Their clothing is designed especially to allow for bloating, colostomy bags, ease of putting on, arm and chest ports, discrete tube access, stomach access, and wheelchair access. For example, their seated twill trousers are designed especially for wheelchair users. They have a longer seam with no pockets on the back and an elasticated waistband so they don't

cut in throughout wearing them. Moreover, the excess fabric is removed from the front hips and behind the knees to give a better fit. The pockets are vertical so the contents can't fall out while someone is wearing the pants. Lastly, there are invisible zips at each side and on the leg hems for ease of use. Figure 1.2 features two of Unhidden's clothing items and the features and solutions that they offer.

To be a socially responsible business, Unhidden uses deadstock fabric, biodegradable packaging, and they have started the process of B-corp certification. B-Corp Certification means being held accountable to a very high standard for how they will treat their employees when they have them, as well as every person and company in their supply chain, and all materials involved in their production and packaging. Some of the materials they use include certified organic cotton, bamboo silk, deadstock jersey, and twill. Their garment prices range from £30-£90 based on the type of garment you buy.

During the 2023 Fall/Winter London Fashion Week in February, Unhidden featured 30 models with disabilities and visible differences. The models wore items such as floaty dresses with easy access around the waist as well as colorful chiffon tie shirts with adjustable sleeves. The show was at footwear brand Kurt Geiger's showroom. This type of show was the first in London Fashion Week's history. Founder Victoria Jenkins stated, "I encourage other designers and show that there is real value and real beauty in being inclusive" (Salah, 2023). Model and content creator Jessica Ping-Wild, who uses a prosthetic leg and struggles to find suitable trousers, said a brand like Unhidden makes all the difference. "A designer taking into consideration the fact that bodies are different... it's almost breaking that mold of beauty that has been so ingrained in society for centuries" (Mills, 2023). Figure 1.1 is a picture from the show.

**Figure 1.1: Unhidden's Show at the 2023 London Fashion Week (Mills, 2023)**



Figure 1.2: Pictures of Unhidden’s clothing, including solutions and features, (Dixon, 2022)

**UNHIDDEN**

Silk shirt

Adaptive features:

- Access through sleeves to whole arm.
- Access to chest through opening in bib detail
- Choice of fastening- magnetic, popper or velcro.

**Who it helps:**  
 Chemo/ radio therapy patients  
 PICC line users  
 Hickman line users  
 People with cerebral palsy  
 People with dexterity issues  
 \*\*Also works for breastfeeding

**UNHIDDEN**

Twill trousers

Adaptive features:

- Elasticated back waistband
- Zip entry at each side as well as the front fly.
- Zip entry at hem

**Who they help:**  
 People with IBS or IBD  
 People with cerebral palsy  
 People with dexterity issues

Tommy Hilfiger



Seeing how his daughter with autism struggled with buttons and shoelaces opened Hilfiger's eyes to the need for a more inclusive fashion industry -- one that allowed people of all abilities to feel empowered while getting dressed. This experience sparked a chain of exciting events and partnerships that ultimately led to the iconic Tommy Hilfiger Adaptive Collection (Yanny, 2020). Tommy Hilfiger launched his adaptive clothing line in 2016 (Bobila, 2016). Tommy Hilfiger lets customers shop by solution. Those solutions include easy closures, fits for prosthetics, seated wear, and comfort. Moreover, some of their universal design features include drawcord stoppers, easy open necklines, extended zipper pulls, hook & loop fly, magnetic buttons, one-handed zippers, port openings, pull-up loops, seated wear, sensory-friendly, side seam openings, and wide-leg openings. For example, Tommy Hilfiger sells a Sensory Logo T-shirt and has features that are sensory friendly by being tagless and replacing traditional stitching with flat seams. Moreover, it has a wide neck opening to make dressing easier. Customers also have the option for magnetic and magnet-free closures on their garments. Figure 1.3 features some of Tommy Hilfiger's adaptive clothing.

**Figure 1.3: Tommy Hilfiger Adaptive Line, (Leaper et al., 2021)**



They sell clothing such as dresses, hoodies, jackets, jeans, leggings, pants, polos, rompers, scarves, shirts, shorts, skirts, sweaters, sweatpants, sweatshirts, swimwear, t-shirts, tops, and watches. Their sizes range from XS-2XL, one size, 2-18, and 30-42 waist size. The materials they use are cotton, nylon, recycled cotton, elastane, wool, polyester, viscose, recycled nylon, hemp, lyocell, linen, recycled wool, acrylic, merino wool, and polyamide. Their prices range from \$17.50-\$299 depending on what you are buying.

### **Yitty**

Yitty is a shapewear brand founded by Lizzo. Yitty is Lizzo's nickname, which is where the name came from. Her shapewear brand is a game changer, not only because it is size inclusive with many different colors, but Yitty just released its new gender-affirming shapewear line. Yitty is based on three principles: self-love, radical inner confidence, and effortless, everyday wear. On March 30, 2023, Yitty announced their new collection, "Your Skin by Yitty: Styles that Celebrate You." The collection will launch in August 2023 and will introduce a line of gender-neutral undergarments, such as tucking thongs and binding tops. These garments will

be targeted toward shoppers who identify as transgender, non-binary, and gender non-conforming (Morris, 2023). Figure 3.1 shows the picture that Lizzo shared of the new collection on her Instagram. These groups of people are currently underserved in the market, which is one reason why Yitty is launching this line.

**Figure 3.1: Yitty's New Gender-Affirming Shapewear Line (Yates, 2023)**



Yitty can be found on Fabletics' website where they currently sell shapewear in various prints, colors, and sizes from an extra small to 6X. The majority of their styles are created with soft, eco-friendly, recycled fibers, and their sustainably designed packaging is made with 100% recycled materials. Moreover, they are part of a certified Carbon Neutral Company. Their prices range from \$7 to \$230, but it also depends if you are a VIP member. If you are a VIP member of Fabletics, you will receive a discount on anything you purchase from the Fabletics brands. Yitty does not only sell shapewear. They sell shapewear, loungewear, underwear, tops, bottoms, one-pieces, and bras (Yitty & Fabletics, 2023).

Yitty is under the brand, Fabletics. Fabletics is a global fashion and lifestyle company committed to inclusivity and delivering performance, quality, and style for unprecedented value through its sister brands, Fabletics and Yitty. Fabletics was founded in 2013 and is headquartered in El Segundo, CA. Fabletics is the largest digitally native activewear brand in the world (Fabletics, 2023).

### **Discussion and Conclusions**

When designing garments, make sure what you are selling is accessible to your target market. This is in terms of price, availability, in-store, online, and more. Moreover, universally designed clothing is a huge opportunity for designers and brands. This type of design has an impact on so many people and encourages others to make better choices in designing clothing. One of those ways is through digital technology. Using digital technology in fashion design and production is a way to increase sustainability, inclusivity, and reduce overproduction. The public and designers can learn from brands like Atacac and The Fabricant on how to make our processes more efficient and digitized to create for all.

Without universal design, groups like the disabled population will have more of a negatively affected mental and physical health compared to people who do not fit into that minority group. Disabled people constitute the largest minority group in the world, yet are the most underserved and underrepresented. To design and create clothing for those who are underrepresented, such as the disabled population, there are principles and goals of universal design. These principles and goals aid designers in universal design so they do not make errors and so they make sure they are designing for everyone.

Universal design helps the environment in four ways. Reducing waste by creating more durable products that last longer; minimizing overproduction because designers create products that have multiple uses (i.e., a skirt into a dress); promoting ethical manufacturing by providing fair labor, fair wage, and using sustainable materials and practices; and lastly, creating timeless styles by promoting slow fashion and not fast fashion.

In the fashion industry, there is generally a lack of awareness regarding universal design. Most companies do not produce clothing that is accessible to everyone, which often forces individuals to make alterations to wear them comfortably. However, there is a growing trend of universal design in the apparel industry that emphasizes the importance of creating clothing that is inclusive and accessible for individuals of all ages, sizes, abilities, and gender identities. By adopting a Universal Design approach, fashion brands can ensure that their products are both fashionable and functional, while also promoting diversity and equality. Additionally, Universal Design in fashion can benefit not only individuals with disabilities but also those who struggle to find clothing in their size. Although there is still work to be done to fully integrate Universal Design principles into the fashion industry, it is evident that the movement is gaining momentum and has the potential to revolutionize the way we think about fashion and accessibility.

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