REVIVING MENDING TO BENEFIT THE INDIVIDUAL, COMMUNITY & INDUSTRY: A MIXED METHODS STUDY

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This research focuses on the revival of mending clothing to benefit various facets of the fashion industry, including individuals, community and non-profits, and brands and corporations. Multiple studies have highlighted the importance of the use phase of a garment's life cycle in relation to sustainability. The longer a garment is worn and cared for, the less impact it has on the environment. One effective method of extending a garment's use phase is mending clothing as it becomes damaged. A popular household activity throughout Western history, mending has faded from popular culture in recent decades, partially due to the emergence of fast fashion. However, due to growing concern for sustainability, renewed interest in DIY fashion and in mending represents an opportunity to promote the latter as a sustainable solution for consumers and for the fashion industry. This study explores this opportunity and focuses on how mending might be used to encourage sustainable practices by consumers, communities, and brands. Data was gathered using three separate methods, including: 1) an online survey; 2) virtual mending workshop with a pre-test and post-test analysis of participant perceived mending skills and mood; and 3) fashion industry expert interviews. This study confirmed a number of persistent barriers to mending, relating to skills, perceptions of what clothing was worth mending, and perceptions of the mending activity itself. Perceptions of sustainability and gender identity also influenced survey participant's decisions to mend. Based on pre-test and post-test analysis, the mending workshop was highly effective in addressing some of those barriers, including improving participant perceived skills, confidence, and mood. Expert interviews highlighted practical implications to overcome potential barriers and promote mending as an accessible way to practice sustainability at the individual, community, and industry level.

Key words: mending, sewing, DIY, sustainability, use phase, well-being, mental health, fashion industry

CHAPTER I

INTRODUCTION

"Clothes worth wearing are worth repairing" (Robinson, 2017).

Despite their popularity throughout Western history, mending and home sewing began to fade from popular culture in the 1980s (Schofield-Tomschin, 1999). Following the dissolution of the Multi Fiber Arrangement (MFA) and the subsequent rise of fast fashion in the 1990s, the accessibility of new, inexpensive clothing quickly negated the need for consumers to mend clothing at home (Perry & Wood, 2019; McLaren & McLauchlen, 2015). In recent years, production of apparel has grown to an all-time high. Between the years of 2000 and 2014, the amount of clothing owned by a single consumer rose by 60% (Remy *et al*., 2016). Additionally, consumers "treat the lowest priced garments as nearly disposable, discarding them after just seven or eight wears" (Remy *et al*., 2016, p. 2). With inexpensive apparel readily available for consumption, consumers have moved away from caring for the garments they own through practices like mending and towards a cycle of purchasing, disposing, and repurchasing new, cheaply made garments.

In response, a reactive movement within the fashion industry was born, with the hope of promoting sustainability within the fashion supply chain (Henninger, 2015). While there are many opportunities to implement sustainable practices within the fashion industry supply chain, this study will focus on opportunities within the consumer use-phase of a garment's lifecycle. In

order to divert garments away from landfills, it is necessary to extend the use phase, or the time between the garment's purchase and disposal (Gwilt, 2013). A practical way to achieve this goal is by mending an article of clothing when it sustains damage (Laitala, 2011). If clothing is damaged and then repaired, it can be worn by the consumer for longer, thus delaying the disposal of the garment. Unfortunately, previous studies have discovered many barriers which deter consumers from practicing mending, including: inability to find or pay for professional repair service (Gwilt, 2013), actual or perceived cost of mending (McLaren & McLauchlen, 2015), inexpensive cost of new clothing (Gwilt, 2012), association with poverty (Gwilt, 2012; McLaren & McLauchlen, 2015; König, 2013), inability to produce invisible mending (Gwilt, 2012), negative association with traditional gender roles (König, 2013), perception of mending as a chore (König, 2013), perception of mending as a solitary activity (Holroyd, 2016, p. 18), and fear that mending may alter the look or fit of a garment (Diddi & Yan, 2019). However, other studies have attempted to overcome some of these barriers by encouraging visible mending as a conscious fashion choice and a way to foster emotional attachment to garments (McLaren & McLauchlen, 2015; Mugge, 2010), socializing through group mending (McLaren & McLauchlen, 2015), using mending as a creative outlet (Holroyd, 2016), framing mending as a sustainable practice (König, 2013), and pursuing designer-led mending (Gwilt, 2012).

The possibility of new consumer interest in mending is supported by the revival of DIY fashion in recent years, mending included. Access to social media has allowed mending groups to share ideas and collaborate online, regardless of their physical location (König, 2013). Additionally, practitioners of creative activities, such as DIY fashion, may reap positive individual benefits. Many studies support the idea that creative activities can have a positive effect on an individual's mental health and well-being. Knitting in particular is frequently cited

as a calming, meditative, and therapeutic activity (Parkins, 2004; Holroyd, 2016; Corkhill, 2014; Kingston, 2012). It is possible that mending could provide similar positive effects.

Given the need for new fashion sustainable practices, the popularity of DIY fashion, and the link between creativity, mending, and well-being, the purpose of this study is to examine how mending may be applicable to today's global fashion industry and present a framework for the revival of mending as a sustainable practice. This first part of this paper will examine current barriers to mending and how they vary between groups (demographics) and attitudes toward sustainability. This section will also place barriers in the context of the COVID-19 pandemic and examine how the pandemic has affected consumers' relationship with mending. The second part of the paper will explore the effects of mending in an educational setting on participants' aptitudes, confidence, and mood. The third and final section of the study will explore potential fashion industry applications for mending as a sustainable practice, based on fashion industry expert interviews.

Research Questions

- **RQ1:** What are the current barriers that prevent some US consumers from practicing mending?
    - **RQ2:** Do barriers to mending vary between groups (demographics) and attitudes towards sustainability?
    - **RQ3:** How has the ongoing COVID-19 pandemic affected consumers' relationship with mending?

- **RQ4:** What are the effects of mending activities in an educational setting (workshop) on attendee's perceived aptitudes, confidence, and mood?
- **RQ5:** What are the potential applications of mending within the fashion industry to encourage sustainability?

Definition of terms

Do-It-Yourself (DIY) - "The activity of doing or making something (as in woodworking or home repair) without professional training or assistance" (Merriam-Webster, 2020)

DIY fashion - Refers to the consumer playing an active part of the design process (but not the entire design process) through the customization of fashion pieces post-purchase, for "individual, experimental, enjoyable, self-actualization, social, economic or ethical" values (Park, 2016)

Fashion industry - For the sake of this study, the definition of the fashion industry encompasses all levels of the fashion complex operating collaboratively to serve consumers of fashion and apparel, including primary and secondary levels of material production and apparel manufacturing, the retail level, and the auxiliary level composed of support services, media, research and consulting, and consumer education (Stone & Farnan, 2018).

Fast fashion - "An approach to the design, creation, and marketing of clothing fashions that emphasizes making fashion trends quickly and cheaply available to consumers" (Fast fashion, 2020)

Mending - Mending is defined as "repair (something that is broken or damaged)" (Mending, 2020). For the purpose of this study, mending refers to repairing, repurposing, or refreshing damaged or tired clothing in a way that prompts the consumer to continue wearing it for an

extended period of time. Examples of mending include, but are not limited to, stitching a hole, darning a sock, covering a hole with a decorative patch or embroidery, dyeing a stained garment, or altering a garment (cropping a t-shirt, cutting jeans into shorts, etc.).

Sustainability - "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Borowy, 2013, p. ix)

Use phase - The part of a garment's life cycle which "extends from the point of purchase to the disposal stage" (Gwilt, 2013, p. 79)

Visible mending - Repaired clothing with "no attempt made at hiding the work that has taken place – it may even become a design feature of the 'new' garment" (Laitala, 2013, p. 578)

Well-being - "An ability to realize personal potential, cope with daily stresses, and contribute productively to society" (Corkhill, 2014, p. 35)

CHAPTER II

LITERATURE REVIEW

History of mending

Mending is often discussed within a historical context. Historical literature relating to mending consists of both primary sources (often instructional literature on sewing) and secondary sources (sources studying the popularity of mending throughout history). Many sources focus on mending as a wartime conservation method in the early twentieth century. Other historical literature mentions mending, but it is not the main focus of the study (König,

2013, p. 572). Overall, these sources portray mending as an important part of Western popular culture.

During World War I, the United States government promoted consumer frugality with wartime slogans such as, “Make economy fashionable lest it become obligatory” (Claudio, 2007, p. 450). Articles of clothing were recycled or mended out of necessity, and the government encouraged fashion designers and manufacturers to limit the number of sizes, styles, and colors of their offerings. If possible, designers were instructed to “use less fabric and avoid needless decoration (Claudio, 2007, p. 450).” All of these efforts made in the United States during WWI led to a 10% drop in the amount of trash produced (Claudio, 2007).

Similarly, during World War II, federal regulations like War Production Board order 85 had a significant impact on the fashion and textile industry (Mower & Pedersen, 2013). As many fabrics traditionally used in women’s apparel were also being utilized by the US military, the federal government put certain limits on apparel production. These efforts were to ensure there was enough fabric to produce necessary items such as parachutes, ammunition bags, and uniforms for the military. As an influential figure in the retail industry, Stanley Marcus (of Neiman Marcus) was selected by the US government to create wartime regulations for apparel production. Because strict regulations on production would be difficult to enforce, Marcus created a series of creative standards that positioned consumers in the role of enforcer. For example, buying or selling garments that used a large amount of fabric, such as full-pleated skirts, was considered both outdated and unpatriotic (Mower & Pedersen, 2013). By equating frugality and conservation with style and patriotism, Marcus was able to guide consumers to make these decisions themselves. These wartime strategies may have some relevance in today’s fashion industry. The positioning of the consumer in the role of social enforcer may have

applications for sustainability-minded brands and consumers today. Fostering partnerships between brands and consumers to encourage sustainable practices could also be used to combat post-consumer waste.

In the United Kingdom, the British Board of Trade encouraged women to support the war effort through home sewing and textile recycling (Reynolds, 1999). Fashion magazines like *Vogue* and *Harper's Bazaar* abandoned their traditional content and replaced it with encouragement and instruction for home sewing (Reynolds, 1999). Again, textile conversation was framed as a woman's duty to her country. Various pamphlets echoed similar standards. For example, a pamphlet titled "Make and Mend for Victory" outlined the following pledge for American consumers:

> As a consumer, in the total defense of democracy, I will do my part to make my home, my community, my country ready, efficient, strong.
>
> *I will buy carefully* - and I will not buy anything above the ceiling price, no matter how much I may want it.
>
> *I will take good care of the things I have* - and I will not buy anything made from vital war materials which I can get along without.
>
> *I will waste nothing* - and I will care to salvage everything needed to win the war ("Make and Mend for Victory", 1942).

Generally, these wartime examples of textile conservation, frugality, and consumer education are reflected in modern efforts towards sustainability in the fashion industry. Practices like conserving fabric, practicing frugality when shopping, extending the life of clothing through proper care, finding new purposes for old clothing, and mending damaged garments were all

considered beneficial to the war effort. Mending was considered to be a helpful and practical way to extend the life of a garment. Besides mending holes and reattaching loose buttons, clothing was often made stronger by the addition of a patch. Faded clothing (made of natural fibers) could be given new life through re-dyeing the entire garment (Cho & Parsons, 2016). These strategies could also be relevant today, and fashion brands and publications may have the opportunity to promote and educate consumers on sustainable practices, such as mending.

The history of mending is not exclusive to wartime pamphlets and propaganda. While wartime efforts portrayed mending as responsible and patriotic, other movements portrayed mending, or lack thereof, in a different manner. Decades later, several notable fashion designers produced purposefully distressed garments for an artfully unraveled aesthetic. For example, the anarchic punk movement inspired destroyed garments that shocked and defied social norms in the 1970s and were later reproduced by designer Vivienne Westwood (Gwilt, 2012). In the 1980s-1990s, Japanese designer Rei Kawakubo and Belgium designer Martin Margiela introduced intentional holes and distress in their designs. Intentional distress ensured that future damage would be able to go unnoticed and mending may be unnecessary (Gwilt, 2012). If the damage was imperceptible, a consumer could continue to wear the clothes for a longer amount of time.

Until the 1980s, sewing was an important task completed within the home, most frequently by women (Körig, 2013; Schofield-Tomschin, 1999). However, attitudes towards mending started to change in the middle of the twentieth century. The ideals of Second Wave Feminism prompted many women to resist mending, as they considered it to be an example of unpaid “women’s work” (König, 2013, p. 576).

Towards the end of the twentieth century, mending began to fade from popular culture, following the World Trade Organization's (WTO) decision to end the Multi-Fiber Agreement (MFA) in 1995 (König, 2013; Perry & Wood, 2019). The dissolution of the MFA signaled a shift from domestic apparel production in the United States to production offshoring and the subsequent rise of fast fashion (Perry & Wood, 2019; Bhardwaj & Fairhurst, 2009). Consumers became more style-conscious and demanded products faster. As relevant technology developed, consumers also gained greater access to more products and began to expect a consistent flow of new merchandise (Bhardwaj & Fairhurst, 2009). Increasingly cheap clothing became the norm. According to the US Bureau of Labor Statistics (2021), the consumer price index for apparel has been decreasing since 1995 and is lower today than it was in the 1990s. With ultra-cheap, easily accessible clothing at consumers' fingertips, consumer desire to mend clothing fell by the wayside, in favor of simply throwing damaged clothing away (McLaren & McLauchlan, 2015).

Historically, clothing was a valuable item that was carefully cared for (Gwilt, 2013). Before the rise of global sourcing and the introduction of fast fashion, the cost of a garment was such that repairing it at home was an inexpensive solution when compared to purchasing a new garment. However, with inexpensive fast fashion brands making mending seem pricey compared to purchasing a new garment, the situation is now reversed (Gwilt, 2013). With cheap clothing readily available for purchase, there is seemingly no need for a consumer to learn mending skills to prolong "old" clothing anymore (McLaren & McLauchlen, 2015). Not only is cheap clothing easily accessible, but fast fashion brands are constantly competing with each other to provide consumers with the latest runway trends with increasingly short lead times. This phenomenon has led to an overly competitive market that is constantly churning out new trends for an ever-

increasing number of fashion seasons, resulting in a culture of "shorter life cycle and higher profit margins" (Bhardwaj & Fairhurst, 2009, p. 166).

Most recently, mending has emerged in the discussion of sustainable fashion as a way to reduce the industry's negative impact on the planet. The fashion industry produces 8-10% of the world's CO_2, along with a host of other environmental and social concerns. The industry is responsible for excessive water usage, contributing approximately 20% of all industrial water pollution and adding harmful microplastic pollution to the ocean (over ⅓ of all microplastic pollution comes from the fashion industry) (Niinimäki *et al.*, 2020). Overall, the industry produces more than 92 million tonnes of textile waste each year (Niinimäki *et al.*, 2020). As these statistics suggest, the fashion industry is in desperate need of sustainable solutions, for both brands and consumers alike. For the sake of sustainability, "it is essential that commodities have long and purposeful lives if global rates of consumption are to be reduced" (Körig, 2013, p. 2). The long history of mending for both conservation (US government's efforts to reduce textile waste during WWI) and style (Neiman Marcus's efforts to frame frugality as style during WWII) shows that there is a historical precedent for the revival of mending for sustainability (Claudio, 2007; Mower & Pedersen, 2013)

Use Phase

The global fashion industry supply chain is fragmented across a number of different industries, including agriculture, petrochemicals, manufacturing, logistics, and retail. During the production process, raw materials are sourced, processed, and spun into yarn, which is often dyed at this stage. Yarns are then woven or knit into textiles and further treated (bleaching, dyeing and/or finishing), before being cut and sewn into garments. It is possible that each of

these steps is carried out in a different country, and there are huge inefficiencies and environmental concerns regarding textile manufacturing, including high "energy use, water use, waste production and chemical use" (Niinimäki *et al.*, 2020, p. 191). Post-production, garments are shipped to retail locations, and ultimately sold to, worn by, and disposed of by consumers (Niinimäki *et al.*, 2020). A garment's end of life, or disposal, phase has similar inefficiencies to the production phase. Consumers dispose (throw away, recycle, donate, store away) of clothing for a number of reasons, including because "they become unfashionable; they no longer fit; they fit but do not look or feel good; or a life change can inspire disposability" (Gwilt, 2013, p. 83). The disposal phase is responsible for a considerable amount of fashion industry-related waste. For example, 73% of all fibers produced in 2015 ended up in a landfill (Niinimäki *et al.*, 2020). Today's fashion industry depends on fast-moving trends that captivate consumers for a short while, before they move on to the next trend. Fast fashion encourages planned obsolescence, or "the production of goods with uneconomically short useful lives so that customers will have to make repeat purchases" (Bulow, 1986, p. 729). According to Joy, "fashion, more than any other industry in the world, embraces obsolescence as a primary goal" (Joy, 2012, p. 276).

According to the Environmental Protection Agency (EPA), in 2017 the US created 16.9 million tons of textile waste. Of the waste generated, only 2.6 million tons were recycled, while 11.2 million tons were sent to landfills. The remaining 3.2 tons were combusted (Environmental Protection Agency, 2019). While these statistics seem daunting, history has shown that consumer conservation can have a large impact on waste, as previously noted in the 10% decrease of waste due to WWI conservation efforts (Claudio, 2007).

One way to address post-consumer waste is through textile recycling. However, textile recycling must overcome several barriers in order to be an effective solution for waste in the

fashion industry. A significant barrier to textile recycling is “economic viability,” as it is not economically advantageous to recycle much of current textile waste. Other barriers relate to the fiber content of popular clothing, as textile waste that contains a blend of fibers may be unsuitable for recycling. “Non-availability of recyclable textile materials” is also an issue; due to the popularity of blended fibers in textiles, much of textile waste is not able to be recycled. Implementing textile recycling technology and infrastructure can also be difficult. Problems such as “technological limitations” (current technology is limited), “lack of information and limited public participation” (the lower public awareness of textile recycling is, the less public participation there is), and “poor coordination, weak policies and standards” (lack of existing plans and policies to ensure an effective recycling scheme, which in turn, harms the overall effectiveness of the textile recycling industry) are all barriers to textile recycling (Filho *et al.*, 2019). While recycling has the potential to be part of a larger solution for the fashion industry, it is not a silver bullet solution for sustainability. For this reason, it is important for consumers to find ways to address sustainability during the use phase of a garments’ life, where they have greater control over the garment.

There are many ways to promote sustainability during the use phase of a garment’s lifecycle, starting in the production or manufacturing phase. Fashion designers may have indirect influence over a garment’s use phase, based on decisions they make during the design process. Many fashion designers do not consider what happens to a garment once it is sold, and instead focus on practicing sustainability exclusively during the design progresses. However, it is possible for a designer to make decisions that will support the consumer in making sustainable choices during the use phase. Examples include designing with fabric that is easy to care for or creating modular designs that encourage easy repairs (Gwilt, 2013). Designers have the power to

set consumers up for successful care of their garment, which can lead to a longer life cycle. While designers may be able to make sustainable practices during the use phase easier, mainstream consumers must embrace mending and repairs in order for companies and designers to take the movement seriously (Gwilt, 2013). Fortunately, there are many easy ways for consumers to prolong the use phase of a garment. For example, how a consumer chooses to wash and dry their clothes can have a positive or negative impact on their clothes and the environment. Frequent use of a tumble dryer not only uses a substantial amount of energy but can also shorten a garment's use phase. Consumers may misidentify fiber types and dry garments incorrectly, resulting in "shrinkage" or "distortion" (Gwilt, 2013, p. 81). If a garment is transformed in such a way that the consumer will no longer want to wear it, then the life of the garment has been shortened. To lengthen the use phase and protect the environment, consumers can choose to avoid environmentally taxing activities, such as use of a tumble dryer.

However, it is not only designers and consumers who have the potential to lengthen the use phase of a garment. Retailers can also help consumers lengthen the use phase of their clothes through the services they choose to offer. While independent repair services have "little to no presence in contemporary mainstream society" (Bennett, 2012, p. 55), a small number of brands have opened their own repair services. For example, not only does Patagonia offer in-house repairs to their customers, but the company actively encourages conservation, rather than overconsumption, even concerning their own products. Consumers have the option to send in damaged products to be fixed by Patagonia's repair team, rather than replacing them with new products (Bennett, 2012). Similarly, Eileen Fisher started its Renew program which buys back the brand's clothes and then "resews, mends, and resells them" in order to lengthen the product's lifecycle (Racklin, 2019). Again, as shown with Neiman Marcus' WWII creative standards

which placed the consumer in the role of sustainability enforcer, fashion companies have the ability to encourage sustainable habits in consumers.

Most of the literature relating to sustainability during the use phase focused on delaying a garments' placement in a landfill by lengthening the use phase through repair. A better understanding of mending methods, including stitching and darning, could lead to a longer life cycle for garments (Laitala, 2011; McLaren & McLauchlan, 2015). If consumers understood mending methods enough to repair clothing when they sustain damage, a substantial amount of clothing may be delayed from entering landfills, thus slowing down the growing tonnage of textile waste. Mending has the potential to play an important role in the sustainability movement and will therefore be explored in detail in this study. While there are many strategies meant to decrease textile waste in the design and production processes, the most successful efforts in prolonging the use phase of a garment have come from corporate initiatives that prompt consumer action, such as Stanley Marcus' WWII standards.

Barriers to Mending

Despite its prevalence throughout history and potential sustainable and psychological benefits, mending is not popular in Western society today (Gwilt, 2013). There are several reasons why mending is not commonly practiced and more or less contained to "online and offline craft communities", with the majority of consumers choosing to throw away clothing that is damaged (Gwilt, 2012). Many barriers to mending were discussed throughout the literature, and included those relating to lack of accessibility, skills, and several negative perceptions of the mending activity itself, among others.

Consumers may lack the skills required to successfully mend clothing or be unwilling to pay for repairs or repair materials. If that is the case, they might prefer to replace damaged garments with new, cheaply made clothing. Due to the popularity and accessibility of fast fashion, many consumers choose to throw clothing away rather than repair it (Bennett, 2012). Additionally, the consumer may buy a new garment instead of paying a professional to mend the damaged one. Even if they wanted to have the garment repaired professionally, the consumer may be unable to find a convenient repair service (Gwilt, 2013). The financial cost of mending is also cited as a reason to avoid mending, despite materials needed for basic mending being relatively inexpensive (McLaren & McLauchlen, 2015).

Another barrier to mending is the consumer's association between mending and poverty. Many consumers are unwilling to wear clothing that has been visibly mended because they associate it with being poor (Gwilt, 2012; McLaren & McLauchlen, 2015). Mending may be perceived as "a slightly grubby subject, associated with poverty, material want and low socio-economic status" (König, 2013, p. 571).

Lack of skills is also a significant barrier to mending. Women entering the workforce in larger numbers coupled with a decrease in availability of Family and Consumer Science courses in schools, opportunities to learn sewing and mending are scarce (Norum, 2013). Additionally, Gwilt (2012) found that the majority of consumers prefer mending and repairs to be invisible. However, when presented with the actual task of repairing a garment, consumers use methods that draw attention to the damage, such as a decorative patch. Gwilt concluded that a consumer's inability, perceived or otherwise, to complete invisible mending tasks is a significant barrier to consumer mending. If a consumer wants to mend a garment, but believes their only option is visible mending, it is possible that they will be less inclined to make the effort.

Most of the mending literature focuses exclusively on women, as mending has traditionally been considered "women's work" (McLaren & McLauchlen, 2015, p. 222). This presents another barrier to mending: the rejection of traditional gender roles. Many women no longer want to perform domestic tasks traditionally assigned to women and take pride in being unable to perform tasks, such as sewing a button. (König, 2013) If mending is associated with an outdated view of women, female consumers might be particularly resistant to take up mending as they fear the correlation with restrictive gender roles, despite the sustainable benefits of mending.

The perception of mending as labor or a chore, rather than a leisure activity, poses another barrier to mending (König, 2013). For example, mending might be considered a "solitary" activity, as opposed to making, e.g., knitting, which can be done in a group (Holroyd, 2016, p. 18). Holroyd attempted to make mending more comparable to making by introducing participants to a "re-knitting" project to repair damaged knits. This allowed participants to be more creative than if they were simply mending (Holroyd, 2016, p. 18). By reframing mending as a creative activity with visually interesting results, participants considered the activity fun and social. Lastly, consumers may avoid mending out of fear that it may alter the look or fit of a garment (Diddi & Yan, 2019).

Despite many barriers, the literature shows that there is some consumer interest in mending. Some women reported regularly mending clothing, including "sewing holes in seams, fixing pulls in knitwear, replacing broken zips, shaving bobbles off pilled fabric, and reinforcing fabric and buttonholes" (Holroyd, 2016, p. 16). These women categorized mending as somewhere between a chore and an enjoyable task (Holroyd, 2016). In order to promote mending as a sustainable practice within the fashion industry, barriers to mending must be identified and addressed.

Overcoming Barriers

Several studies have attempted to address the previously mentioned barriers to mending and present the practice in a more positive light. In addition to the environmental benefits of reducing waste, mending may have positive effects on the individual consumer. For example, mending and sewing clothing could benefit consumers economically by providing better fit in clothing, an outlet for creativity, and positive effects on their psychological well-being, in addition to negating the need to purchase clothing more often (Schofield-Tomschin, 1999).

Several studies attempted to overcome barriers to mending by framing it as a fun, enjoyable, and creative activity. As noted by Schofield-Tomschin, mending and sewing may be pursued as an outlet for creativity (1999). To overcome the idea that mending is a solitary and boring chore, many consumers have started mending groups, which also provided an outlet for creativity and had positive effects on their psychological well-being. Additionally, consumers have hosted mending-related events, such as "the 'Department of Repair', Middleton's 'Sock Exchange' darning event and fashion design researcher Otto Von Busch's Community Repair project," as well as McLaren & McLauchlan's own "Love Your Clothes" event (2015, p. 223). The collaborative "Love Your Clothes" event revealed that mending could indeed have social and creative aspects (McLaren & McLauchlen, 2015). In a 2012 study, participants saw a group sewing workshop as a pleasant experience, despite responses to an initial survey, describing sewing as a chore (Gwilt, 2012). Again, some consumers use mending as a creative outlet by embellishing clothing to cover damage, rather than using invisible mending (Holroyd, 2016). This shows that mending can be encouraged by framing it as a pleasurable activity (Holroyd, 2016).

Consumers may also pursue mending for psychological or emotional benefits. A few studies explored emotion as a way to overcome certain barriers to mending. If a consumer feels sentiment or emotional attachment towards an object, they are more likely to repair it, rather than replace it (Mugge, 2010). Similarly, if a garment is homemade, rather than store-bought, the owner may be more likely to repair and maintain it, as the original maker put the initial effort into the garment (Holroyd, 2016). Practitioners of visible mending hope to use creativity and design to encourage an emotional connection between the consumer and their clothing, so they will hold onto each item longer, thus extending the use phase. This can also help address the barrier of association between mending and poverty. Consumers can choose to wear obviously mended clothing as a fashion statement, rather than something to be hidden (McLaren & McLauchlen, 2015).

Lastly, for consumers concerned about the seemingly overwhelming environmental impact of fashion, mending provides a way to help on an individual level (König, 2013). Mending could appeal to consumers for multiple reasons, including having a positive impact on the fashion industry and sustainability best practices.

Barriers to mending must be addressed in order to effectively encourage consumers to repair their clothes. This study will explore barriers to mending to assess how receptive consumers may be to practicing mending as a sustainable practice.

Revival of DIY

Do-It-Yourself (DIY) fashion became an increasingly popular activity with a new generation in the early 21st century. In response to the popularity of fast fashion, a minority of

consumers began practicing DIY textile “craft skills,” such as knitting, to promote sustainability. The popularity of knitting is exemplified in the “celebrity knitting” craze of the early 2000s, which portrayed a mainstream desire to return to a simple, slower lifestyle (Parkins, 2004). Additionally, research points to a link between DIY fashion and the “slow” fashion movement, finding a common ground in rejecting “the mass products found on store shelves” and promoting the act of sewing (Barrocas *et al.*, 2018, p. 245).

Environmentalism and sustainability are the largely cited reasons for pursuing mending and can also be associated with the “slow” fashion movement (König, 2013). Literature shows a growth in mending as a group activity, particularly in North America, the UK, and Europe (König, 2013). An example of community or social mending is ReFashion Week. ReFashion Week is an annual New York City-based fashion week where consumers are invited to participate in “shopping, swapping, mending, and discussions” in the hopes of encouraging a reduction of textile waste (ReFashion Week, 2020). In 2020, ReFashion Week focused on visible and invisible mending techniques (Davis, 2020).

Despite being considered an old or outdated task, modern resurgence of mending does not necessarily mean a regression to the past. Social media is an important aspect of mending groups and provides a way of socializing and sharing ideas and instructions (König, 2013).

Unfortunately, academic sources on DIY fashion or “fashion hacks" are severely limited. Much of the information on DIY fashion can be found through social media, particularly YouTube. A simple YouTube search for “DIY fashion” returns a large number of video results. For example, the first result is a video titled “DIY Y2K and 00s Aesthetic Trends! *broke babe walmart edition*” with 390,051 views. This video focuses on using DIY sewing methods to turn clothing purchases from Walmart into trendy pieces inspired by the 2000s (GoldBloodedKiller,

2020). Another video titled “THRIFT FLIP 🦋👕 diy clothing transformations | JENerationDIY” (393,365 views) shows items purchased at a thrift store being altered or repurposed into trendier items (JENerationDIY, 2020). These videos are just two amongst the thousands of search results returned on YouTube. Many of the videos reference TikTok, or are “TikTok -inspired.” TikTok is a social media platform popular with younger consumers, with half of its 500 million monthly users being between the ages of 13 and18 (Anderson, 2020). This seems to indicate that DIY fashion is popular with younger consumers and is being promoted through platforms like YouTube and TikTok.

As many of these DIY fashion videos use sewing techniques, there may be potential for younger consumers to be receptive to mending techniques as well, possibly as a way to showcase individual style. In her book *Mend! A Refashioning Manual and Manifesto,* Kate Sekules points to several reasons that mending, particularly visible mending, is a personal response to fast fashion and textile waste. Sekules describes mending as “personal and artisanal,” something accessible, fun, and unique to the mender, where “you will never sew two mends the same, you will evolve a style of your own - it’s as inevitable as handwriting” (2020, p. 2).

The popularity of DIY is very important to this study. It shows that there is an interest in DIY fashion solutions, such as upcycling and repurposing. This is another example of how the consumer can be an agent for change within the global fashion industry. Given the current interest in DIY fashion, now is the time to capitalize on the public interest and promote mending as a sustainable practice. Not only could there be interest in mending as a sustainable practice, but similar creative practices have been found to have positive effects on individual well-being.

Creativity, Well-Being & Mental Health

Many studies have explored potential links between creativity, well-being, and mental health. A large portion of this literature focuses specifically on the benefits of knitting on a consumer's well-being, which can be easily extended to an understanding of all types of needlearts and other textile crafts. Knitting can provide the knitter with a feeling of accomplishment, a source of creativity, a "connection to tradition," and social fulfillment (Riley, 2013, p. 52). Due to the similarities between knitting and mending, which are both needlearts that provide the consumer with a usable product, particular attention was paid to the benefits of knitting and how they may benefit practitioners of mending as well.

Researchers generally cite the repetitive nature of knitting as having a calming, meditative-like effect on the knitter that provides benefits to their well-being. For example, Parkins describes knitting as "therapeutic" and "meditative," comparing its calming nature to Eastern religious and spiritual traditions. She describes the act of knitting as similar to meditation (slowed breathing and heart rate) and states that such practices could lead to a more mindful existence (Parkins, 2004). Holroyd found similar results, writing that participants found activities like knitting to be a source of "relaxation and concentration," and the repetitive movements provided a calm time of reflection (Holroyd, 2016, p. 13). Corkhill echoed Parkins and Holroyd and stated that the repetitive, "rhythmic" nature of knitting can be calming or even "meditative and therapeutic" (Corkhill, 2014). Kingston also noted knitting's similarities to mediation (2012). Due to knitting's rhythmic nature, it can be helpful to the knitter because the practice of meditation can be difficult to learn (Corkhill, 2014).

Knitting may also be beneficial to an individual's well-being. By the end of the knitting process, the knitter has created something tangible (Corkhill, 2014). Some studies report that

knitting provides the knitter a sense of accomplishment once their knitting project is complete. Kingston and Riley also noted feelings of success felt by the knitter (2012; 2013). Whether positive qualities of knitting also apply to other needlearts, such as mending, will be explored in this study.

Similar to mending, knitting can be practiced alone or in a group. The social aspect of knitting can also have positive effects on a person's well-being (Corkhill, 2014). Kingston recounts leaving an on-campus knitting group feeling "uplifted, relaxed, happy, and with a better sense of perspective about what matters in life" (2012, p. 18). During an ethnographic study of a local knitting group, Potter discovered several positive themes, including "acceptance, sharing personal stories and friendship, and positive social and learning environments" (2017, p. 601). Consumers that participate in online knitting communities find that knitting socially improves their confidence and communication in social situations (Riley, 2013). Lastly, knitting has been shown to have a positive effect on those suffering from mental health issues. It can inspire happiness in individuals with mental illnesses, such as depression (Corkhill, 2014). As mending and knitting share many similarities, it is possible that mending could have similar positive effects.

Creativity in general, including knitting, embroidery, and mending, is known to help improve the health of individuals dealing with mental illness. Much of the literature shows creativity as a positive way to help manage mental illness. For example, one study links participation in creative activity groups to better outcomes for mental health patients over a span of five years and a decrease in "self-reported and clinician-rated symptoms" (Caddy, 2012, p. 332). Some inpatients in mental health facilities expressed that they felt "powerless and bored," with the boredom increasing as they began to recover (Stickley, 2011). Inpatients that

participated in art groups were able to combat feelings of boredom. Participation in arts activities resulted in positive benefits, such as more socialization, an outlet for self-expression, providing a topic to discuss apart from their mental illness, and a source of optimism for the future (Stickley, 2011).

Creative, craft-type activities are found to promote less "mild cognitive impairment" related to age in persons 70 years and older (Kingston, 2012, p. 18). A 70-year-old patient with Alzheimer's experienced fewer feelings of apathy and depression after knitting. Similarly, a group of patients suffering from anorexia nervosa found that knitting had a positive effect on their feelings of anxiety. While the inpatients' feelings of anxiety decreased, they found that knitting also decreased their feelings of fear and provided them with a sense of calm (Kingston, 2012).

Despite the amount of literature on the topic, one researcher states that it can be difficult to compare these studies, as they are specific to certain groups and therefore cannot be generalized. Even though studies show that creative activities are beneficial and "promote relaxation, provide a means of self-expression, reduce blood pressure while boosting the immune system and reducing stress," Lackey argues that these conclusions are "weak" and unreliable (Lackey, 2011, p. 501). Lackey (2011) points to a lack of a universal definition as to why creative arts cannot be proven effective or ineffective but acknowledges that creativity should not be discounted for future study.

The positive benefits of creativity, specifically knitting, on the individual are essential to this study. It provides a way to frame a similar practice, mending, as not only beneficial to the planet, but also to the individual. This study will explore whether or not these benefits apply to

mending. These potential benefits, as well as creative solutions that connect mending with fashion, can further foster sustainability and offer positive solutions for today's fashion industry.

Visible mending

According to several sources, visible mending may help consumers overcome several barriers to mending, including the association between mending and poverty. Visible mending has the potential to increase the mender's emotional connection with a garment and make mending a more creative experience (Davis, 2020; Gwilt, 2012; McLaren & McLauchlen, 2015; Mugge, 2010). Visible mending does not attempt to hide the damage, but makes the repair a new design feature, thus distinguishing mending from its association with poverty (Laitala, 2013; McLaren & McLauchlen, 2015). While the academic literature relating to visible mending is extremely limited, there are several non-academic sources that describe the motivations behind visible mending and provide examples of visible mending techniques. First, visible mending can illustrate a garment's lifecycle and challenges the association of mending with poverty (Kurutz, 2020). Visible mending is also a method of self-expression (Kurutz, 2020; Racklin, 2019). Mending can be very personal and can allow a consumer to develop their own style (Sekules, 2020). Kurutz describes it as "choosing your mile of highway to pick up trash: It is a personal, small-scale, possibly futile response to the overwhelming problems of mass consumption and waste" (2020). Despite the seemingly insurmountable task of challenging mass consumption, visible mending is still an outlet for self-expression and personalization, and can be viewed as a conscious choice, rather than a necessity.

The website *Visible Mending* gives an overview of many different styles of visible mending with the caption "Feast your eyes, fix your clothes," as well as tutorials and techniques (Visible Mending, 2020). Other sites focus on specific techniques of visible mending which adds a decorative element to repairs. One of the most popular techniques is sashiko, "a Japanese mending technique involving a running stitch and geometric patterns," which is simple to learn and ideal for fixing ripped jeans (Racklin, 2019; Jacobs, 2020). Other techniques include an iron-on patch and blanket stitch (also ideal for jeans), portholes with an eyelet stitch (for holes in t-shirts), crochet mend (for bigger holes in knitwear), darning or needle weaving (for knitwear or denim), Swiss darning/duplicate stitch (for knitwear), and embroidery (Jacobs, 2020). Employing visible mending creates a sense of repair as "making," increasing a sense of enjoyment while repairing and prolonging the life of the garment (Holroyd, 2016). While this study does not focus heavily on visible mending, it will explore the related idea of mending made fun in an attempt to overcome barriers related to mending being boring, a chore, and/or a lonely activity.

Mending and the COVID-19 pandemic

The ongoing COVID-19 pandemic has had an interesting effect on home sewing. In the early stages of the pandemic, when medical-grade face masks were in short supply, government and medical officials recommended consumers use cloth masks to help prevent the spread of the virus. The necessity for cloth masks prompted a burst of home sewing where consumers made face masks at home (Lwanga, 2020). Lwanga hopes this renewed interest in home sewing will not be forgotten once the pandemic subsides. The pandemic has forced many consumers to face

the negative aspects of overconsumption, which may have fueled this renewed interest in sewing, mending, and darning (Terry, 2020). Therefore, this research is timely as consumers, who have increasing awareness of the impact of fast fashion and sustainability, are in a unique position to be considering consumption in a time of crisis.

The literature review provided a historical context for mending and emphasized the importance of extending a garment's use phase through several methods, including mending. Multiple barriers to mending were identified, as well as suggestions for how to circumvent some of these barriers. The literature supported the potential for renewed interest mending through the popularization of DIY fashion, as well as the wellness benefits of a similar activity, knitting. However, several gaps were revealed within the literature. First, an updated review of barriers to mending was needed to take into account the effects of the COVID-19 pandemic. Second, given the therapeutic benefits of knitting, additional research was needed to determine if mending can provide similar benefits. Lastly, more research was needed to determine the place of mending within the global fashion industry, particularly for brands and retailers. Five research questions were formulated to address these gaps.

Research questions

In order to determine whether mending can serve as a practical sustainable solution for the fashion industry, several research questions were formed. The first research question (RQ1) focused on current barriers to mending. Several barriers were found in the literature and include: lack of skills (Gwilt, 2012), perceived cost of mending (McLaren & McLauchlen, 2015),

disposal of cheap, damaged clothing (Gwilt, 2012), low cost of new clothing (Gwilt, 2012), inaccessibility of professional mending services (Gwilt, 2013), association with poverty (Gwilt, 2012; McLaren & McLauchlen, 2015; König, 2013), association with traditional gender roles (König, 2013), perception of mending as a chore (König, 2013), perception of mending as a solitary activity (Holroyd, 2016, p. 18), and fear that mending may alter the look or fit of a garment (Diddi & Yan, 2019). While the literature reviewed above identifies many barriers to mending, most those studies are focused on European consumers (UK and Scandinavian countries). Overall, there is little recent literature on barriers to mending in the US, and none that take into account the effects of the COVID-19 pandemic. RQ1 addressed this gap by providing an updated exploration into barriers to mending with a focus on US consumers.

Additionally, samples in previous mending studies have been limited to women, or specific crafting and sewing communities. In addressing RQ1, a broader and more diverse sample was targeted, beyond individuals involved in fashion and textile crafts. Similarly, the second research question (RQ2) addressed this gap by expanding on these demographics, focusing on those outside of the crafting and fashion community, as well as on male participants and participants from different age groups and professions. Barriers to mending based on participants' attitudes towards sustainability were also explored.

Lastly, there is a lack of data concerning the effects of the COVID-19 pandemic on consumer's relationship with mending. The third research question (RQ3) focused on the influence of the COVID-19 pandemic on participants' mending habits. The overall goal of RQ1-RQ3 was to determine participants' overall perceptions of mending and what barriers need to be overcome in order for mending to serve as a sustainable solution for the fashion industry.

The fourth research question (RQ4) focused on the individual benefits of mending, as well as the potential benefits of mending in an educational setting. Several studies within the literature focused on the positive effects of creativity and knitting on an individual's well-being. However, few or no studies have explored the possible positive effects of mending on well-being and mood. The goal of RQ4 was to determine whether or not mending activities in an educational setting affect consumers' aptitudes, confidence, and mood.

Lastly, fashion industry applications for mending are rarely discussed in the literature, especially in the context of corporate fashion retail. The fifth research question (RQ5) addressed this gap by exploring fashion industry applications for mending in a corporate fashion industry context.

The research questions explored in this study include:

- **RQ1:** What are current barriers that prevent some US consumers from practicing mending?
    - **RQ2:** Do barriers to mending vary between groups (demographics) and attitudes toward sustainability?
    - **RQ3:** How has the ongoing COVID-19 pandemic affected consumers' relationship with mending?
- **RQ4:** What are the effects of mending activities in an educational setting (workshop) on attendee's perceived aptitudes, confidence, and mood?
- **RQ5:** What are the potential applications of mending within the fashion industry to encourage sustainability?

CHAPTER III

METHODOLOGY

Online survey

An online survey was used to address RQ1 (What are current barriers that prevent some US consumers from practicing mending?)**,** RQ2 (Do barriers to mending vary between groups [demographics] and attitudes toward sustainability?), and RQ3 (How has the ongoing COVID-19 pandemic affected consumers' relationship with mending?).

This instrument was developed using already identified barriers found in the literature, as well as questions relating to demographics, attitudes towards sustainability, and habits during the COVID-19 pandemic. Survey questions were based on those found in Norum (2013). The survey itself was created using Qualtrics.

Most of the primary survey items were measured using statements and a 5-point Likert scale, as well as a dichotomous item to distinguish between respondents who practiced mending and those that did not.

The survey explored a broad population's (broader than the immediately accessible Kent State University School of Fashion student population) perspective on sustainable fashion, mending, and the COVID-19 pandemic. Snowball sampling (through email and social media) was used to gain access to this broader population, as the researcher did not have the resources to obtain a probability sample of the general population. The initial recruitment strategy sought adult participants from the researcher's network. Initial participants were asked to share the

invitation with other subjects but were not obligated or pressured to do so, and nominations were not sought. No identifying information was collected. The targeted number of participants was approximately 300.

To analyze the survey data, descriptive statistics and mean comparison tests were used to determine current barriers to mending. Those barriers were compared to those discovered in the literature. Then, the researcher cross-tabulated the data to determine whether there were differences in perception of sustainability, mending and barriers, and response to the COVID-19 pandemic across different demographics.

Virtual mending workshop

The virtual mending workshop addressed RQ4 (What are the effects of mending activities in an educational setting [workshop] on attendee's perceived aptitudes, confidence, and mood?). The virtual mending workshop was hosted by Praxis Fiber Workshop, a nonprofit fiber art center in Cleveland, Ohio. Praxis regularly hosts fiber-related workshops, such as weaving, embroidery, and natural dyes. This mending workshop was designed specifically for the purpose of this study.

The virtual setting (Zoom) was chosen to avoid safety concerns relating to the ongoing COVID-19 pandemic. The workshop was two hours long and focused on two different mending techniques: embroidery and darning. The design and development of the workshop was a collaborative effort between the researcher and the instructor, who is highly involved with Praxis. The instructor specializes in studio art and teaches in multiple settings, including Praxis and arts high education. Additionally, the role of the researcher included data collection. Praxis agreed to offer the workshop free of charge with the recognition that it would constitute a "test

run" that will be refined based on the research and finalized as part of the company's future offerings. Table 1 shows the mending skills and materials included in the workshop.

To address RQ4, workshop participants were asked to complete a pre- and post-test questionnaire that featured questions about sustainability, confidence in mending, and a Positive and Negative Affect Schedule (PANAS) mood assessment. The PANAS is a mood self-assessment developed by Watson *et al.* to measure a person's Positive and Negative Affect (1988). Watson *et al.* describes Positive Affect as the extent to which a person feels "enthusiastic, active, and alert." Someone with a high Positive Affect is in a "state of high energy, full concentration, and pleasurable engagement, whereas low PA is characterized by sadness and lethargy." Conversely, a Negative Affect is described as "general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness, with low NA being a state of calmness and serenity" (Watson *et al.*, 1988, p. 1063).

During the pre-test, participants were asked to complete the PANAS questionnaire by indicating to what extent they are feeling each given emotion that day on a scale of "extremely (5)" to "very slightly or not at all (1)." Scores were divided into two categories: "Positive Affect Scores" (interested, excited, strong, enthusiastic, proud, inspired, determined, attentive, active) or "Negative Affect Scores" (distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, afraid) (Watson, 1988). A second PANAS assessment was given during the post-test to determine if and how participants' mood changed as a result of the workshop.

The pre- and post-tests also explored how the workshop affected the participants' aptitudes and confidence in mending. Questions were asked during the pre- and -post tests to determine thoughts on sustainable fashion, as well as experience and confidence in mending.

Additionally, the workshop served as a pilot test for Praxis to determine interest in future mending workshops. Lastly, the virtual mending workshop was used to explore the viability of mending workshops in general and how educational settings could aid in the revival of mending.

Table 1.

Virtual mending workshop techniques and materials

Technique	Materials
Embroidery (running stitch, back stitch, alternative back stitch method, and blanket stitch)	- Damaged clothing (with holes or rips) or scraps of fabric to practice - Sharp or embroidery needle - Embroidery floss
Darning	- Damaged clothing (with holes or rips) or scraps of fabric to practice - Darning or tapestry needle - A cotton or wool yarn

Workshop participants were recruited through Praxis' normal channels (website, email list, social media). The targeted number of participants was approximately 10 to 15, which corresponds to an average attendance in Praxis' workshops.

Data for the pre- and post-tests (including the PANAS mood assessment) was collected before and after the workshop. The pre- and post-tests were created using Qualtrics and were administered by sending a Qualtrics link via the Zoom chat box before and after the workshop, respectively. Additionally, observations were made by the researcher during the workshop (observations included participant interactions, comments, questions, successes, and difficulties). No identifying information was collected.

The pre- and post-tests were analyzed using comparative analysis. A non-identifiable self-generated code was obtained from individual participants and used to compare the pre- and

post-test results of each individual participant. This allowed a paired sample t-test of the means with the directional hypothesis of improved "Positive Affect" scores and reduced "Negative Affect" scores among participants (Watson, 1988).

Fashion industry expert interviews

Fashion industry expert interviews were used to address RQ5 (What are the potential applications of mending within the fashion industry to encourage sustainability?). The purpose of the expert interviews was exploratory and used to assess practical applications for promoting mending in a corporate fashion retail context.

Expert interviewees were found through the researcher's own network, as well as through the Kent State University School of Fashion Industry Liaison. Each individual either currently, or has previously worked, for a fashion industry organization, ranging from small businesses to nonprofits to large department store retail chains. The goal was to interview professionals from different types of organizations to gain insight into how ideas may vary between interviewees.

Interview questions were based on Bennett (2012) and Park (2020). Interviews were recorded, transcribed, and analyzed by identifying emerging themes based on the criteria of recurrence ("observed when at least two parts of a report had the same thread of meaning, even though different wording indicated such a meaning") (Owen, 1984). Two interviewees declined recording; these interviews were analyzed based on a real-time transcription by the researcher. Results were used, along with other aspects of the mixed method study, to develop a framework for corporations to partner with consumers to overcome barriers to mending for sustainability.

CHAPTER IV

RESULTS

Online survey

The intent of the online survey was to address RQ1-RQ3 **(**current barriers to mending, the difference in barriers between demographics and attitudes towards sustainability, and the effect of the COVID-19 pandemic on consumers' relationship with mending). Survey participants were recruited using snowball sampling. A total of 527 participants responded to the survey. Of those responses, 71 incomplete attempts were removed. The remaining 456 responses were analyzed.

Sample characteristics

The first section of the survey focused on participant demographics, including age, gender identity, race/ethnicity, country of residence, highest level of education achieved, current employment status, household income, and professional activity. As the recruitment relied on snowball sampling, the survey did not reach a group of participants that reflects the diversity of the general population. However, this was expected due to the use of non-probability sampling, and this approach achieved the goal of reaching a sizable number of participants with professional backgrounds that do not relate to fashion or textiles.

The respondents were majoritarily female 87.7% (n = 400) (Figure 1), white or Caucasian 91.7% (n = 418), and currently reside in North/Central America 98.2% (n = 502). The age of participants ranged from 18 to 75+ years old (Figure 2). The highest level of education received varied, with a majority of respondents having at least a bachelor's degree 73.3% (n = 334). The employment status of participants was more diverse, with less than half of the respondents citing full-time employment 48.3% (n = 220). Annual household income levels were similarly diverse. Lastly, only a small number of participants worked in either textiles 2.0% (n = 9) or fashion 4.4% (n = 20).

Figure 1.

Gender identity of survey participants

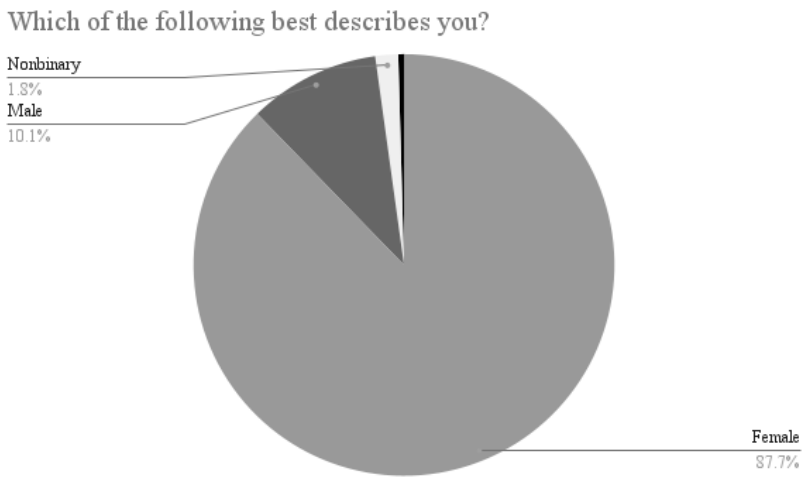
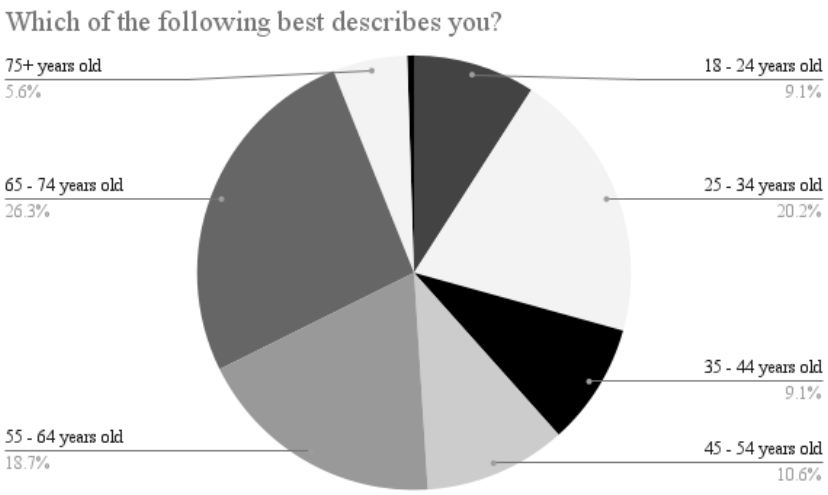


Figure 2.

Age of survey participants



Mending habits

The following sections share initial findings from the survey and address RQ1. In order to identify current barriers to mending for this sample, the respondents were divided into two groups, those who engage in mending activities 79.2% (n=361) and those who do not 20.8% (n=95). Although the majority of participants appeared to engage in mending, a sizable number (n=95) indicated that they did not, which allowed for statistical comparison between the two groups using a mean comparison test.

Survey participants were asked to rate each variable based on how much they agreed or disagreed with a given statement on a scale from “strongly agree” (5) to “strongly disagree” (1). Then, average responses to each variable were computed and compared between menders 79.2% (n=361) and nonmenders 20.8% (n = 95). The goal was to attempt to identify differences that

could determine the decision to mend or not, and thus represent potential barriers for non-menders. A t-test for independent samples was used to determine whether there are statistical differences between the two groups.

This section explores the sample's perceptions of mending and will help address RQ1 (What are current barriers that prevent consumers from practicing mending?), RQ2 (Do barriers to mending vary between groups [demographics] and attitudes toward sustainability?), and RQ3 (How has the ongoing COVID-19 pandemic affected consumers' relationship with mending?) Participants assessed their own skills, perceptions, and experiences relating to mending by responding to each given statement using a 5-point Likert scale. Descriptive statistics of each survey variable can be found in Appendix D.

Respondents' perceptions of mending-related skills

This section explores participant responses to variables relating to mending-related skills, including hand sewing and machine sewing, and how perceptions vary between menders and nonmenders.

Over half of respondents either "strongly agreed" 47.1% (n=215) or "somewhat agreed" 34.9% (n=159) that they knew how to sew by hand. When the sample was divided into menders and nonmenders, menders knew how to sew by hand at a much higher rate (mean = 4.34, SD = 0.97) than nonmenders (mean = 2.83, SD = 1.58) (Table 2). The t-test (Table 2) shows a statistically highly significant difference between menders and nonmenders ($t = 11.72$, $p<.001$).

The majority of respondents either "strongly agreed" 34.5% (n = 157) or "somewhat agreed" 32.5% (n=148) that they knew how to use a sewing machine. Dividing the sample into

menders and nonmenders provided similar results to hand sewing. Menders reported being able to use a sewing machine at a higher rate (mean = 3.80, SD = 1.41) than nonmenders (mean = 2.4, SD = 1.50) (Table 2). The t-test revealed a highly significant statistical difference between the two groups ($t = 1.50$, $p<.001$) (Table 2).

When prompted with the statement "I possess the necessary skills to effectively mend damaged clothing," the majority of participants either "strongly agreed" 24.6% (n=112) or "somewhat agreed" 41.9% (n=191). It should be noted that, of the individuals surveyed, only a small portion work in the textile- 2.1% (n=9) or fashion-related 4.7 % (n=20) industries. This shows that many non-fashion or textile industry respondents have at least some mending knowledge. The t-test showed a highly significant statistical difference between menders (mean = 3.50, SD = 1.11) and nonmenders (mean = 2.14, SD = 1.31), reinforcing a difference in skills between the two groups (Table 2).

These results revealed that the majority of participants were capable of hand and machine sewing and generally believed that they had the skills to mend clothing. However, the t-test (Table 2) showed that the difference between the mending group and the non-mending group in all three variables is statistically highly significant, indicating that menders are much more confident in their mending-related skills than nonmenders. Lack of skills in hand sewing, machine sewing, and general lack of mending skills, perceived or otherwise, appeared as a barrier to mending for this sample.

Table 2.

Results of t-tests and descriptive statistics comparing skill perceptions of respondents who practice mending and those who do not

	Mending group		Non-mending group			
	Mean	SD	Mean	SD	*t (454)*	*P(T<=t)*
Hand sewing skills	4.34	0.97	2.83	1.58	11.72	<.001
Machine sewing skills	3.80	1.41	2.36	1.50	8.70	<.001
Tendency to believe they have the skills to mend	3.85	1.11	2.14	1.31	12.82	<.001

Respondent perception of whether clothing is worth mending

This section explores participants' perceptions regarding whether their clothes are worth repairing and the difference in perceptions between menders and nonmenders.

A similar number of participants "strongly agreed" 12.7% (n=58) or "somewhat agreed" 36.4% (n=166) and "somewhat disagreed" 25.9% (n=118) or "strongly disagreed" 14.5% (n=66) that it is easier to purchase new clothing than repair damaged clothing. This showed an almost equal divide amongst participants. Nonmenders (mean = 4.16, SD = 0.79) agreed that it is easier to purchase new clothing at a much higher average than menders (mean = 2.78, SD = 1.27) (Table 3). The t-test showed a statistically highly significant difference between menders and nonmenders ($t = -10.07$, $p<.001$), indicating that nonmenders find it much easier to purchase new clothing rather than mend damaged clothing.

The majority of participants either "somewhat disagreed" 35.1% (n=160) or "strongly disagreed" 45.2% (n=206) that it is not worth mending their clothing as they will soon be out of style. While there was a statistically highly significant difference ($t = -7.44$, $p<.001$) between menders (mean = 1.67, SD = 0.86) and nonmenders (mean = 2.44, SD = 1.03), both groups

generally disagreed that trendy clothing is not worth mending (Table 3). Participants may not purchase overly trendy clothing items, or they may feel that trendy items are still worth mending.

A slight majority of participants “somewhat disagreed” 28.5% (n=130), and “strongly disagreed” 27.6% (n=126) that only investment pieces (high quality, timeless styles with resale potential) were worth repairing. Nonmenders (mean = 3.58, SD = 1.20) believed that only investment pieces are worth mending to a greater degree than menders (mean = 2.36, SD = 1.3) (Table 3). The t-test showed a statistically highly significant difference ($t = -8.30$, $p<.001$) between the two groups.

A majority of survey participants either “strongly disagreed" 22.1% (n=101) or “somewhat disagreed” 37.5% (n=171) with the statement, “My clothing is too cheap to bother mending.” On average, nonmenders (mean =3.24, SD = 1.14) believed that their clothing was too cheap to mend, more so than menders (mean = 2.23, SD = 1.01) (Table 3). The t-test showed a statistically highly significant difference ($t = -8.47$, $p<.001$) between menders and nonmenders (Table 3).

Overall, there appeared to be a difference between menders’ and nonmenders’ perceptions of what clothing is worth mending; nonmenders believed clothing was worth mending less than menders. For all variables, the t-test showed a statistically highly significant difference between menders and nonmenders. This indicated that ease of purchase for new clothing and initial low cost (cheapness) of clothing were all barriers to mending for this sample. However, despite the t-test showing a highly significant difference between the two groups regarding clothing being too trendy to mend, both menders and nonmenders still generally “disagreed,” indicating that trendiness is not a barrier to mending for this sample.

Table 3.

Results of t-tests and descriptive statistics comparing perceptions of whether it is worth mending clothing between respondents who practice mending and those who do not

	Mending group		***Non-mending group***			
	Mean	*SD*	*Mean*	*SD*	*t (454)*	*P(T<=t)*
Respondents' tendency to believe clothing is too cheap to mend	2.23	1.01	3.24	1.14	-8.47	<.001
Respondents' tendency to believe their clothing is too trendy to mend	1.67	0.86	2.44	1.03	-7.44	<.001
Respondents' tendency to believe it is easier to purchase new clothing than repair damaged clothing	2.78	1.27	4.16	0.79	-10.07	<.001
Respondents' tendency to believe only investment pieces are worth mending	2.36	1.30	3.58	1.20	-8.30	<.001

Participant perceptions of the mending activity

The following section examines participant perceptions of the mending activity itself and compares perceptions of menders vs. nonmenders.

When asked to what extent they agreed with the statement "Mending clothing is expensive," the majority of the participants either "strongly disagreed" 36.4% (n=166) or "somewhat disagree" 37.5% (n=171). Nonmenders (mean = 2.41, SD = 0.95) perceived mending to be a more expensive activity than menders (mean = 1.92, SD = 1.00), and there was a statistically highly significant difference (t = -4.32, p<.001) between the two groups (Table 4). Despite the difference, both groups still "disagreed" that mending is expensive (Table 4).

Over half of participants “strongly agreed” 17.8% (n=81) or “somewhat agreed” 33.8% (n=154) with the statement “I could easily find a professional repair service to repair damaged clothing” (Table 4). This shows that mending services are accessible to about half the sample, but there is still a large percentage of participants who could not easily locate a professional mending service. Menders (mean = 3.30, SD = 1.27) and non-menders (mean = 3.01, SD = 1.34) agree that professional mending services are accessible to a similar degree, with statistically non-significant difference ($t = 1.93$, $p = 0.06$) between the two groups (Table 4).

The majority of participants indicated that they either “strongly agreed” 36.8% (n=168) or “somewhat agreed” 35.7% (n=163) that they own, or could easily find, the necessary materials to mend clothing at home. Menders (mean = 4.15, SD = 1.03) agreed at a higher rate than nonmenders (mean = 2.60, SD = 1.22), and the t-test showed a statistically highly significant difference ($t = 12.46$, $p<.001$) between the two groups (Table 4).

When prompted with the statement “Mended clothing looks shabby,” the majority of respondents either “strongly disagreed” 26.9% (n=122) or “Somewhat disagreed” 42.3% (n=192). Menders (mean = 2.05, SD = 0.93) disagreed that mended clothing looks shabby more so than nonmenders (mean = 2.54, SD = 0.94) (Table 4). While there was a highly statistically significant difference ($t = -4.51$, $p<.001$) between the groups, both groups generally disagreed that mended clothing looks shabby (Table 4).

In response to the statement “Mending reminds me of traditional housewives,” only a few participants “Strongly agreed" 6.4% (n=29), while the rest of the participants were divided, almost evenly, between “Somewhat agreed” 29.2% (n=133), “Neither agreed nor disagreed” 24.1% (n=110), “Somewhat disagreed” 21.9% (n=100), or “Strongly disagreed” 18.4% (n=84). As a possible association between mending and traditional housewives is not inherently positive

or negative, the statement “The role and tasks of the traditional housewife are outdated” was also included, to which a slight majority of participants either “strongly agreed” 26.8% (n=122) or “somewhat agreed” 25.5% (n=116).

There was no statistically significant difference (t = -0.10, p = 0.921) between menders (mean = 2.83, SD = 1.24) and nonmenders (mean = 2.84, SD = 1.14) in the association between mending and traditional housewives (Table 4). Additionally, there was no statistically significant difference (t = -1.21, p = 0.227) between menders (mean = 3.26, SD = 1.46) and nonmenders (mean = 3.46, SD = 1.33) in their perceptions of the role of traditional housewives as outdated (Table 4). This indicates that neither group associated mending with traditional housewives, and there was very little difference between menders’ and nonmenders’ perceptions of the relevance of the role of traditional housewives.

A little over half of the participants indicated that they either “strongly agreed” 11.9% (n=54) or “somewhat agreed” 43.3% (n=197) that mending is a chore. However, this is not necessarily a barrier, as many participants may choose to mend anyways. The t-test showed a highly statistically significant difference (t = -4.68, p<.001) between menders (mean = 3.20, SD = 1.14) and nonmenders (mean = 3.80, SD = 1.01) regarding their perception of mending as a chore (Table 4).

The majority of respondents either “strongly agreed” 17.4% (n=79) or “somewhat agreed” 39.1% (n=178) that mending is a solitary activity. The t-test showed a highly significant difference (t = -2.77, p = 0.006) between menders (mean = 3.43, SD = 1.12) and nonmenders (mean = 3.77, SD = 0.91) (Table 4).

Less than half of participants indicated that they “strongly agreed” 12.3% (n = 56) or “somewhat agreed” 35.9% (n = 163) that mending is enjoyable. Menders (mean = 3.47, SD =

1.07) agreed that mending is enjoyable to a greater extent than nonmenders (mean = 2.42, SD = 1.12) (Table 4). The t-test showed a statistically highly significant difference ($t = 8.43$, $p<.001$) between menders and nonmenders regarding the perception of mending as an enjoyable activity (Table 4).

When prompted with the statement "I don't have time to mend clothing," less than half of participants either "strongly agreed" 12.3% (n = 56) or "somewhat agree" 25.3% (n=115). This may have been a result of the COVID-19 pandemic, which resulted in many people working from home and generally having more time to themselves. Nonmenders (mean = 3.70, SD = 2.24) agreed that they do not have time to mend more than menders (mean = 2.73, SD = 1.17) (Table 4). The t-test showed a statistically highly significant difference ($t = -7.07$, $p<.001$) between menders and nonmenders regarding participants' perception that they do not have enough time to mend clothing (Table 4).

Only a fraction of participants either "strongly agreed" 3.7% (n=17) or "somewhat agreed" 26.4% (n=120) that they worried mending would alter the appearance of their clothing negatively (Table 4). Nonmenders (mean = 3.04, SD = 1.09) agreed that they worried about mending altering the appearance of their clothes more than menders (mean = 2.59, SD = 1.16) (Table 4). There was a statistically significant difference ($t = -3.44$, $p = 0.001$) between menders and nonmenders regarding worries that mending would alter the appearance of their clothing.

Alternatively, the majority of participants either "somewhat disagreed" 33.4% (n=152) or "strongly disagreed" 29.2% (n=133) that they worried that their clothing would no longer fit after mending. Nonmenders (mean = 2.67, SD = 1.12) worried that mending will alter the fit of their clothes more than menders (mean = 2.139, SD = 1.033) (Table 4). While the t-test revealed

a statistically highly significant difference ($t = -4.41$, $p<.001$) between the two groups, they both generally disagreed that they would worry mending would alter the fit of their clothing (Table 4).

Overall, there were some notable differences between menders' and nonmenders' perceptions of the mending activity itself. For many variables in this section, the t-test showed a statistically highly significant difference between menders and nonmenders, including cost of mending, access to materials, association with poverty, perception of mending as a chore, perception of mending as a solitary activity, perception of mending as an enjoyable activity, concern that mending will alter the appearance of clothing, and concern that mending would alter the fit of clothing. Despite the highly statistically significant difference found between menders and nonmenders, participants did not agree that cost of mending, association with poverty, and concern over fit prevented them from mending. Therefore, these variables were not considered to be barriers to mending.

Additionally, there was not a large statistical significance and no statistical significance between menders and nonmenders for some variables, including access to professional mending services and association between mending and traditional housewives, respectively. This indicated that these are not barriers to mending for this sample.

Due to the statistically highly significant difference between menders and nonmenders, access to materials, perception of mending as a chore, perception of mending as a solitary activity, perception of mending as unenjoyable, lack of time, and concern over change to garment appearance are all barriers to mending for this sample.

Table 4.

Results of t-tests and descriptive statistics comparing perceptions of the mending activity between respondents who practice mending and those who do not

	Mending group		***Non-mending group***			
	Mean	*SD*	*Mean*	*SD*	*t (454)*	*P(T<=t)*
Respondents' tendency to believe mending is expensive	1.92	1.00	2.41	0.95	-4.32	<.001
Respondents' tendency to believe professional mending services are accessible	3.30	1.27	3.01	1.34	1.93	0.055[ns]
Respondents' tendency to believe they could find the materials necessary to mend	4.15	1.03	2.60	1.22	12.46	<.001
Respondents' tendency to believe mended clothing looks shabby	2.05	0.93	2.54	0.94	-4.51	<.001
Respondents' tendency to associate mending with traditional housewives	2.83	1.24	2.84	1.14	-0.10	0.921[ns]
Respondents' tendency to believe the role of housewife is outdated	3.26	1.46	3.46	1.33	-1.21	0.227[ns]
Respondents' tendency to believe mending is a chore	3.20	1.14	3.80	1.01	-4.68	<.001
Respondents' tendency to believe mending is a solitary activity	3.43	1.12	3.77	0.91	-2.77	0.006
Respondents' tendency to believe mending is fun	3.47	1.07	2.42	1.12	8.43	<.001
Respondents' tendency to believe they do not have time to mend	2.73	1.17	3.70	1.24	-7.07	<.001
Respondents' tendency to believe mending will alter the appearance of their clothes negatively	2.59	1.16	3.04	1.09	-3.44	0.001
Respondents' tendency to believe mending will alter the fit of their clothes	2.14	1.03	2.67	1.12	-4.41	<.001

ns: statistically non-significant

Based on this sample, the data confirms several barriers to mending, relating to skills, whether or not clothing is worth mending, and perceptions of the mending activity itself. Barriers relating to skills include lack of skills, both hand and machine sewing. Barriers relating to whether or not clothing is worth mending include ease of purchase of new clothing, initial low cost of clothing. Barriers relating to perceptions of the mending activity itself include cost of mending, access to materials, association with poverty, perception of mending as a chore, perception of mending as a solitary activity, perception that mending is an unenjoyable activity, concern that mending will alter the size and/or fit of clothing, and perception of mending as a chore.

A few assumed barriers were discovered not to be barriers for this sample. These included clothing being too trendy, accessibility of professional mending services (Gwilt, 2013), and association of mending with traditional housewives (McLaren & McLauchlen, 2015). Table 5 shows which variables were barriers and not barriers for this sample.

Table 5.

Participant barriers to mending

	Barrier	**Not a Barrier**
Hand sewing skills	X	
Machine sewing skills	X	
Mending skills	X	
Clothing is too cheap to mend	X	
Clothing is too trendy to mend		X
Easier to purchase new clothing than repair damaged clothing	X	

Only investment pieces are worth mending	X	
Mending is expensive	X	
Accessibility of professional mending services		X
Accessibility of mending materials	X	
Association of mending with poverty	X	
Association of mending with traditional housewives		X
Mending is a chore	X	
Mending is a solitary activity	X	
Mending is unenjoyable	X	
Mending is time consuming	X	
Mending will alter the appearance of their clothing negatively	X	
Mending will alter the fit of their clothing negatively	X	

Demographic impact on mending habits

This section explores differences in participant responses based on demographics and addresses RQ2 (Do barriers to mending vary between groups [demographics] and attitudes towards sustainability?). Three demographic variables were chosen to analyze: gender identity, age, and professional activity. Gender identity and age were chosen based on information generated during the literature review. Gender identity was chosen due to mending being traditionally associated with women. Age was chosen due to resistance in some younger women to learn domestic skills. Professional activity was chosen to determine whether participants outside of fashion and textile-related occupations practiced mending.

Table 6 shows the difference between male and female menders and nonmenders. As stated previously, 88.1% (n = 400) of participants identified as female, 10.1% (n = 46) identified as male, and 1.8% (n = 8) identified as nonbinary. For the purpose of this study, nonbinary

respondents were not included, as there were not enough participants to allow for statistical comparison. Female participants tended to mend more frequently than male participants, with 82% (n = 328) of female participants reporting that they practiced mending, compared to 52% (n = 22) of male participants. A Pearson Chi-square test performed on the cross-tabulated data shows a highly significant relationship ($p < .001$) between gender identity and mending habits, indicating that gender identity has a significant effect on whether or not a person practices mending.

Table 6.

Cross-tabulated data between gender identity and mending habits

	Menders		**Nonmenders**		
	Number	Percentage	Number	Percentage	**Total**
Female	328	82%	72	18%	400
Male	24	52%	22	48%	46

Unlike gender identity, no statistically significant relationship was discovered between age and mending habits. Survey participants ranged in age from 18 - 75+ years old. A Pearson Chi-square test performed on the cross-tabulated data showed a statistically non-significant relationship ($p = .53$) between age groups and mending habits.

Similarly, no statistically significant relationship was discovered between professional activity and mending habits. A limited number of participants were active in industries related to fashion and, as expected, had the highest rates of menders. However, a Pearson Chi-square test

performed on the overall cross-tabulated data showed a statistically non-significant relationship ($p = .12$) between professional activity and mending habits.

Based on these results, there was a significant difference in mending habits among gender identities. However, there was not much variability between menders and nonmenders among age groups and professions.

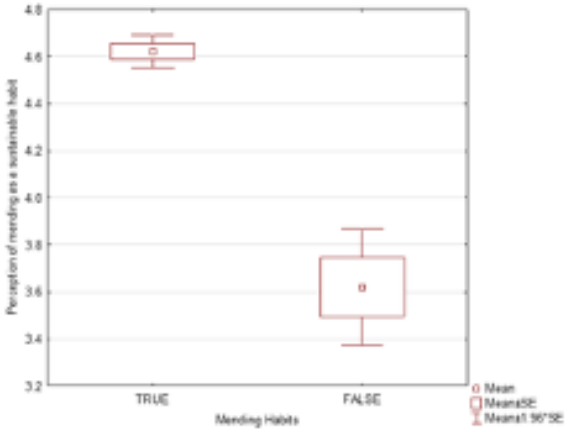
Perceptions of sustainable fashion

This section explores variables relating to participant perception of sustainable fashion to help address RQ2. Again, we examine the difference in perspectives between menders and non-menders to test whether attitudes toward sustainable fashion determine mending behavior.

When assessing their perceptions of mending as a sustainable habit, the majority of respondents either “strongly agreed” 60.4% (n=275) or “somewhat agreed” 27.9% (n=127) that mending is a sustainable habit. However, the mending group appears to associate mending with sustainability to a greater extent than the non-mending group. The t-test showed a statistically highly significant difference ($t = 10.65$, $p<.001$) in the perception of mending as sustainable between menders (mean = 4.60, SD = 0.66) and nonmenders (mean = 3.60, SD = 1.23) (Table 7). The dispersion of the results within groups suggests a consensus among participants who mend while the non-mending group shows more dispersed results (Figure 3).

Figure 3.

Participants' tendency to believe that mending is a sustainable habit



The majority of respondents either "strongly agreed" 27.7% (n=126) or "somewhat agreed" 46.6% (n=212) with the statement "Making sustainable decisions when shopping for fashion and apparel is important to me." Menders (mean = 4.03, SD = 0.87) indicated that making sustainable fashion choices was important to them at a higher rate than nonmenders (mean = 3.55, SD = 0.998). The t-test showed a statistically highly significant difference ($t = 4.64$, $p<.001$) between menders and nonmenders regarding the importance of making sustainable fashion choices (Table 7).

Attitudes varied slightly when discussing personal contributions to the sustainable fashion movement. Only 14.1% (n = 64) of respondents "strongly agreed" and 25.9% (n=118) "somewhat agreed" that they actively looked for ways to make the fashion industry more sustainable. This indicates that, while making sustainable fashion decisions was important to many participants, they appeared to be more passive when it came to actively seeking out sustainable options. Menders (mean = 3.27, SD = 1.16) tended to actively look for ways to make

the fashion industry sustainable more so than nonmenders (mean = 2.79, SD = 1.16) (Table 7). There was a statistically highly significant difference (t = 3.59, p<.001) between the two groups, indicating a higher level of motivation for making sustainable fashion choices in menders (Table 7).

Even fewer respondents “strongly agreed” 9.0% (n = 41) or “somewhat agreed” 27.9% (n = 127) that their shopping choices made the fashion industry more sustainable. Similarly, 14.3% (n=65) of respondents “somewhat disagreed” and 6.6% (n=30) “strongly disagreed”. The remaining 42.3% (n=193) “neither agree nor disagreed.” This indicates that many participants may be indifferent to how much of an impact their choices have on the fashion industry. There was a highly significant difference (t = 2.83, p = 0.005) between menders (mean = 3.25, SD = 1.00) and nonmenders (mean = 2.93, SD = 0.99) regarding whether they perceived that their personal choices made the fashion industry more sustainable (Figure 7).

A majority of respondents indicated that they either “strongly agreed” 22.4% (n=102) or “somewhat agreed" 45.9% (n=209) that making sustainable fashion choices is difficult. This indicates that, while making sustainable choices may be important to many participants, they find those choices can be hard to make. Unlike the previous variables, both menders (mean = 3.761, SD = 1.006) and nonmenders (mean = 3.73, SD = 0.96) reported that sustainable choices were similarly difficult to make. The difference between the two groups in the tendency to believe making sustainable choices is difficult was not statistically significant (t = 0.30, p = 0.762) (Table 7).

Overall, there appeared to be a difference between menders’ and nonmenders’ perceptions of sustainable fashion for this sample. Menders seemed to place a higher importance on sustainable fashion and believed that their contributions made more of an impact on the

industry than nonmenders. Additionally, even though both groups find sustainable choices equally difficult to make, menders tended to make the more sustainable choice anyways, despite the apparent difficulties. For all sustainable fashion-related variables, the t-test showed a statistically highly significant difference between menders and nonmenders, with the exception of the perception that sustainable choices are difficult to make. This indicates that participants' perceptions of or efforts towards sustainable fashion may be a barrier to mending for this sample, as nonmenders tended to value sustainable fashion less than menders.

Table 7.

Results of t-tests and descriptive statistics comparing sustainable fashion perceptions of respondents who practice mending and those who do not

	Mending group		***Non-mending group***			
	Mean	*SD*	*Mean*	*SD*	*t (454)*	*P(T<=t)*
Importance of shopping for sustainable apparel for respondents	4.03	0.87	3.55	0.998	4.64	<.001
Respondents' tendency to actively make the fashion industry more sustainable	3.27	1.16	2.79	1.16	3.59	<.001
Respondents' tendency to think sustainable choices are difficult to make	3.76	1.01	3.73	0.96	0.30	0.762[ns]
Respondents' tendency to believe their choices make the fashion industry more sustainable	3.25	1	2.93	0.99	2.83	0.005
Respondents' tendency to believe mending is a sustainable habit	4.62	0.67	3.62	1.23	10.65	<.001

ns: statistically non-significant

Relationship between mending and the COVID-19 pandemic

Lastly, this section addressed RQ3 (How has the ongoing COVID-19 pandemic affected consumers' relationship with mending?). Similar to the previous sections, the respondents were divided into menders and nonmenders and were compared through statistical comparison using a mean comparison test. Participants were asked to rate how much they agreed or disagreed with a given statement (related to mending and the COVID-19 pandemic) on a scale from "strongly agree" to "strongly disagree." Then, average responses to each statement were computed and compared between menders and nonmenders to attempt to identify differences. Responses could determine the decision to mend or not and thus represent potential barriers. A t-test for independent samples was used to determine whether there are statistical differences between the two groups. Additionally, this section contained four true and false statements.

A majority of participants either "strongly agreed" 32.5% (n=148) or "somewhat agreed" 33.6% (n=153) that the COVID-19 pandemic made them reconsider their consumption of material goods. This suggests that the pandemic has prompted some participants to reflect on their consumption in a different way than before the pandemic. This may have been caused by several things, including the scarcity of some resources as a result of the pandemic and the disruption in certain supply chains (including fashion and textiles). Menders (mean = 3.84, SD = 1.14) agreed with the above statement to a higher degree than nonmenders (mean =3.484, SD = 1.27) (Table 8). While a statistically significant mean difference ($t = 2.68$, $p = 0.008$) was shown between menders and nonmenders, it was not as pronounced as it was for some of the barriers to mending (Table 8).

Similarly, the majority of participants stated that they either “strongly agreed” 47.9% (n=218) or “somewhat agreed” 25.7% (n=117) that, as a result of the COVID-19 pandemic, they purchased less clothing on average than before the pandemic. This indicates that the pandemic affected the apparel shopping habits of this sample. Not only did participants reconsider their consumption of material goods, but they also purchased less clothing. One possible explanation is a lack of necessity for new clothes due to remote work and general confinement to the home due to the pandemic. Additionally, some participants may have experienced a loss of income due to the pandemic. However, only a small percentage of participants stated that they were unemployed and looking for work 1.5% (n=7). Menders (mean = 4.07, SD = 1.18) agreed that they purchase less clothing during the pandemic to a greater extent than nonmenders (mean = 3.72, SD = 1.389) (Table 8). Although there was a statistically significant mean difference between the two groups ($t = 2.52$, $p = 0.012$), it was not as pronounced as with other statements, partially due to a larger dispersion of nonmender responses. Additionally, despite the statistically significant mean difference, both groups generally agreed that they purchased less clothing during the pandemic.

Over half of respondents either “strongly agreed” 22.9% (n=104) or “somewhat agreed” 34.7% (n=158) that they made an effort to learn something new during the pandemic. Reasons for this could include more free time due to unemployment (although only a small number of participants considered themselves unemployed), time off from work (unrelated to unemployment), or work-from-home. Additionally, this may be attributed to people being confined to the home due to the pandemic and not going out as much as before. Menders (mean = 3.55, SD = 1.23) tended to agree with the statement at a higher rate than nonmenders (mean = 3.10, SD = 1.31). There was a statistically significant difference ($t = 3.15$, $p = 0.002$) between the

two groups, with a larger dispersion of nonmenders. This indicates that menders were more inclined to learn new skills during the pandemic.

Half of respondents 50% (n=227) reported that they started a new sustainable habit during the pandemic. There was a statistically highly significant difference between groups (t =4.664, p = 0.012), with menders (mean = 3.44, SD = 1.12) agreeing to the above statement to a much higher degree than nonmenders (mean = 2.83, SD = 1.14). This indicates that menders tended to engage in new sustainable practices during the pandemic to a greater extent than nonmenders.

This section of the survey also included four "true or false" statements. When asked about their mending habits during the pandemic, the majority of respondents 65.1% (n=296) indicated that they had mended an article of clothing during the pandemic. However, this number is less than the number of participants who initially reported to practice mending 79.2% (n=361). This indicates that, while mending has been practiced by the majority of respondents during the pandemic, the pandemic did not appear to prompt nonmenders to start mending.

The responses related to the COVID-19 pandemic revealed several things that may be applicable to the revival of mending. Many participants said that the pandemic had caused them to reconsider their consumption or material goods and/or started new sustainable habits, indicating that some participants may be more receptive to picking up a new, sustainable habit, such as mending. However, most results did not appear to apply to the non-mending group, due to the statistically significant difference between the two groups for all categories. For this reason, it does not appear that the pandemic had an impact on the mending habits of those who did not already practice mending.

Table 8.

Results of t-tests and descriptive statistics comparing perceptions of the COVID-19 pandemic between respondents who practice mending and those who do not

	Mending group		**Non-mending group**			
	Mean	SD	Mean	SD	t (454)	P(T<=t)
Respondents' tendency to believe the COVID-19 pandemic made them reconsider their material consumption	3.84	1.14	3.48	1.27	2.68	0.008
Respondents' tendency to believe they purchased less clothing during the pandemic	4.07	1.18	3.72	1.39	2.52	0.012
Respondents' tendency to start a new sustainable practice during the COVID-19 pandemic	3.44	1.12	2.83	1.14	4.66	<.001
Respondents' tendency to learn a new skill during the COVID-19 pandemic	3.55	1.23	3.10	1.31	3.15	0.002
Respondents' tendency to believe they did not have the skills to make a face mask	2.42	1.41	2.72	1.43	-1.85	0.066

Virtual mending workshop

The goal of the virtual mending workshop was to address RQ4 (What are the effects of mending activities in an educational setting [workshop] on attendee's perceived aptitudes, confidence, and mood?). Data was collected through a pre-test and post-test, which consisted of questions relating to mending and sustainability, as well as a mood self-assessment. Observations were also made throughout the workshop by the researcher, and a post-workshop interview with the workshop instructor was conducted and included in the data analysis.

Pre- & Post-test

The purpose of the pre- and post-tests was to evaluate participants' attitudes towards sustainability and mending, as well as their confidence in their own mending skills both before and after the mending workshop. The pre- and post-tests contained several statements about sustainability and mending with a 5-point Likert scale.

Of the ten participants, only one lacked previous mending experience. Responses to the pre-test indicated that participants were generally passionate about sustainability in the fashion industry (mean = 4.3, SD = 0.67) and making sustainable choices when shopping for apparel was important to them (mean = 4.3, SD = 0.48). Participants generally agreed that mending is a sustainable habit (mean = 4.7, SD = 0.67). However, when asked to rate how confident they were in their own mending skills, the average was lower (mean = 3.1, SD = 1.2).

During the post-test, participants were given the same statements, plus one additional statement not included in the pre-test ("I will try some or all of these mending techniques at home"). Then, their average responses were compared to those from the pre-test. There was a high level of agreement between all variables. Confidence in mending was the only variable with a statistically significant difference between pre- and post-tests (Table 9). In order to determine whether participants experienced an increase in confidence as a result of the workshop, a paired t-test with a directional hypothesis (one-tail) was used (Table 9). The results show a highly significant increase in confidence in mending skills among participants ($t = 3.16$, $p = 0.005$).

Table 9.

Results of t-test comparing pre- and post-workshop confidence in mending

	Pre-test		Post-test			
	Mean	SD	Mean	SD	t(9)	P(T<=t) one-tail
Confidence in mending skills	3.10	1.20	4.20	0.42	3.16	0.005

Mood assessment

Each participant was also asked to assess their mood using a PANAS instrument (Watson *et al.*, 1988), both before and after the workshop, as detailed in the Methods section. The average Positive Affect and Negative Affect Scores from before and after the workshop were compared using a paired sample t-test, shown in Table 10.

Due to the use of a directional hypothesis (testing for an increased Positive Affect Score and a diminished Negative Affect Score), a one-tail t-test was used to interpret the PANAS results (Table 10). The t-test shows a statistically significant increase of Positive Affect scores ($t = 2.53$, $p = 0.016$), and a statistically significant decrease of Negative Affect scores ($t = 1.96$, $p = 0.041$). The results suggest that the mending workshop had a significant positive impact on the moods of participants.

Table 10.

Results of one-tail paired t-test comparing pre- and post-workshop PANAS results

	Pre-workshop		**Post-workshop**			
	Mean	SD	Mean	SD	t(9)	P(T<=t) one-tail
Positive Affect Score	29.8	6.25	35.7	4.42	2.53	0.016*
Negative Affect Score	15	5.98	11.3	2.26	1.96	0.041*

* Significant at $\alpha = 0.05$

Workshop observations

During the workshop, the researcher observed the interactions between the instructor and the class, as well as interactions between the participants. As the workshop took place over Zoom, participants had the option to use their computer's microphone, or input their questions into the Zoom chat box. At the beginning of the workshop, the instructor asked participants to describe their sewing experiences. Responses included:

"Handsewing / knitting experience - grew up watching my mom and grandmother make things"
"I'm a weaver mostly, but not really done much darning"
"There are three of us here two of us have sewing experience one of us none at all"
"I have sewing experience, but wish I was more confident. I mostly weave."
"I'm a shoemaker. I sew leather"
"Sewing books yes! Only minimally with textiles/clothing/darning"
"I was a fashion major in undergrad"
"My grandmother was a seamstress… but I know very little"

Throughout the workshop, participants asked a number of questions, the majority of which related to the darning portion of the workshop. This indicated that the participants had more trouble understanding darning and needed more direction from the instructor. Participants seemed willing to participate, by mending along with the instructor, asking questions out loud or

in the chat, and sharing thoughts and recommendations with other participants. Table 11 shows the different questions and comments made by the participants during the workshop.

Table 11.

Virtual workshop questions and comments

Embroidery	Darning	General
"Can you show me the backside of the stitch?"	*"Is darning only used for knits or can it be used in a woven as well?"*	*"I've noticed a resurgence of mending lately. Why do you think that is?"*
Question about mending silk and avoid rips (volume on participant's microphone was too low)	*"Does it matter if your needle is rounded/dull, or does it have to be sharp?"*	*Participant asked for specific mending advice for mending a flannel shirt.*
"just want to say we are blown away over here with the hidden tail!!!!"	*"are things we should be aware of, to avoid the darned area feeling like we have a pebble in our shoe? I figure the thread needs to be strong but I'd be worried about a little bump at the mended part"*	*"Thanks for doing this:) Does anyone have any top fav books/blogs on mending? Or basic hand stitching"*
	" If you are using embroidery thread and happen to run out, is there a way to tie off your darning, so you can start from the same place?"	*"darning knitwear and replicating the knit stitch is a pain in the neck."*
	"If I'm mending a sock that is on it's way out, but maybe doesn'ts have a hole yet, should I be catching those fibers on the sides?"	*"lightbulbs work well as a darning egg"*
	"At the end, do you do the same thing with each of the leftover threads?"	*"i rlly liked Katrina Rodabaugh's Mending Matters!"*
	"Do you have any recommendations if you don't have enough of a tail to do the diagonal tail on the back?"	*"Thank you, I'm so glad I joined! I thought darning was a lot more daunting than this so I'm very grateful for the class :-)"*
		"thank you! this was so fun and helpful"
		"This was so fun! Thank you for doing this. <3"

At the end of the workshop, several participants thanked the instructor, noted that they had enjoyed the workshop, and expressed gratitude for the instructor for hosting it.

Post-workshop interview with instructor

After the workshop, the researcher conducted an interview with the workshop instructor to gauge the success of the workshop from her perspective. The instructor stated that she was very happy with the workshop. In fact, she had already repeated the same workshop, with the same structure, in a different educational setting (higher education). The instructor also commented that the original workshop attracted a variety of people who she had not met through previous Praxis workshops. She believed this indicated that mending is an important subject with the potential to attract a variety of people from different backgrounds. The instructor particularly enjoyed that workshop participants followed along with their own materials, something she was initially unsure they would do. She also noted that participants asked great questions throughout the workshop.

The instructor said she would not change much about how the original workshop was taught, and she was very interested in hosting more mending workshops at Praxis. Moreover, she wanted to emphasize to future participants how these workshops related to the fashion industry. Content linking mending to issues within the fashion industry would provide context to the activity in terms of the larger sustainable fashion movement, leading to a sense of personal contribution for participants. She believed that mending workshops, in combination with the natural dyeing workshops that Praxis already offers, covered two major problems when it comes

to caring for garments: stains and holes. Lastly, the instructor indicated that she would be interested in offering multiple tiers of mending workshops, featuring more advanced techniques.

To summarize, the virtual mending workshop addressed RQ4 (What are the effects of mending activities in an educational setting [workshop] on attendee's perceived aptitudes, confidence, and mood?). Based on the results from the pre- and post-tests, including the PANAS mood assessment, the virtual mending workshop appeared to improve participants' confidence in mending. Additionally, the PANAS indicated that participating in the workshop increased positive feelings and decreased negative feelings. In addition to the positive benefits to participant confidence and mood, the workshop instructor felt that the workshop was successful and was very interested in repeating it in the future. This indicates a repeatability to the workshop, showing that it could be replicated in different settings (in this case, in a free workshop at Praxis and an institute of higher education), with similar levels of success. This workshop model could act as an outline for other institutions to recreate and encourage more people to learn mending techniques.

Fashion industry expert interviews

The goal of the fashion industry expert interviews was to address RQ5 (What are the potential applications of mending within the fashion industry to encourage sustainability?). Four interviews were conducted with five fashion industry professionals over phone and Zoom. Questions focused on the interviewee's experiences and opinions on sustainability in the fashion industry and to what degree they felt that mending was applicable to the fashion industry as a sustainable practice. To answer the research question, a thematic analysis was conducted using

the recurrence and forcefulness criteria (Owen, 1984). The interviews were analyzed for common themes relevant to mending applications that may benefit the fashion industry. This section will first summarize each interview, then discuss the major themes relevant to RQ5.

Interviewee #1

The first interviewee works as the Director of Retail and Customer Service at a small handbag brand that produces high quality leather accessories and markets their products to women ages 25-75. The interviewee believes sustainability is a core value of her brand for several reasons, citing the presence of sustainable practices in multiple aspects of the brand's supply chain, including product design, materials, and waste management within production. While the brand itself prioritizes sustainability, she believes that the brand's customers are not motivated by the brand's sustainable practices. Rather, they are motivated by wanting a high-quality product. The interviewee was curious to learn more about how interested customers are in sustainability and believes that education plays a large role in customers wanting sustainability.

The brand offers in-house repair services, including leather conditioning. Before the COVID-19 pandemic, leather conditioning was offered to customers while they shopped in store, free of charge. Additionally, customers are able to mail in or drop off damaged products for repair. After a product arrives for repair, the brand's sewing manager assesses the damage, determines the appropriate action to take, and decides whether or not the customer will be charged for the repair (any defects in the products themselves are repaired at no additional charge). The interviewee described the brand's repair service as a priority because it provides

customers with confidence in the product and brand. She stated that the brand chooses to provide these services as a result of the "Patagonia mindset." In other words, the brand wants to show that they are trustworthy and stand by their product. They want the customer to feel good about the product and not to be wasteful, but thoughtful. She stated that the brand cares about and values the products, so they are happy to fix them. Ultimately, she believes that the repair services will remain a part of the brand and grow with the company.

Interviewee #2

Interviewee #2 works as the Store Director at a small nonprofit boutique that sells Fair Trade jewelry, clothing, and homewares. She believes that sustainability is an important value for the business, stating that, through the store's relationship with global artisans and vendor partners, "sustainability is a pillar of Fair Trade principles." The interviewee said that the store makes an effort to "align our business to support those goals as well." She noted a growing interest in sustainability in the store's customer base, particularly with current and younger generations.

The store does not currently offer mending services, due to the fact that customers have not requested it. The interviewee believes that the lack of customer interest stems from the store's clothing department being smaller than the homeware and jewelry departments. She noted, "If our clothing offering was larger and our customers were requesting that service, I think we would definitely offer it." She also added that she would be interested in collaborating with other nonprofit organizations to offer mending services. She stated, "part of why we have community partnerships is to align with other community partners to provide services that we

don't and champion our same values." The interviewee also suggested that the ideal collaboration would have customers or members that overlap with the store's own.

Interviewee #3

The third interviewee currently works as a Category Analyst for a large, business-to-business textile manufacturer and had previously worked as an inventory planner for a large clothing, accessories, and lifestyle retailer. The interviewee believes that her current company is "still in its infancy" when it comes to sustainability. However, regarding her former employer, she has noticed a "shift in their mindset" regarding sustainability since she left. While neither company offers mending services, Interviewee #3 described the life cycle of her former company's products positively. She noted,

"There are items within [Former Company]'s assortment that have a longer lifespan than, say, your typical H&M garment, or typical Forever21 garment. I have a pair of jeans from [Former Company] that I've probably worn for the last three years on a regular basis, and they still look the same way as I did when I bought them, which is a huge testament to [Former Company]'s product development team as well as the quality that they put their product together with."

She also mentioned that her former company markets towards younger Millennials and Generation Z, who she believes are groups that "get sustainability." She thinks that mending may appeal to this group.

However, she also noted that a company offering mending services might not be economically viable or scalable, but could see the brand offering repair classes or ways to style

clothing and find ways to expand the lifespan (cut holes in jeans or cut jeans into shorts). The interviewee stated that incentives for mending may vary from person to person, whether it be feeling good, moral status, connecting to the community, or out of financial necessity (if the item is expensive). Companies need to "figure out what's right for your consumer, tap into their psyche to make a compelling argument for why they should do things a certain way."

Interviewees #4 and #5

The last interview was with two interviewees, both of whom are employed as fashion designers for a large department store retail chain. Interviewee #4 said that she believes that the company is overall sustainable (solar panels, recycled plastic bags, etc.), outside of the product development process. She believes that the product development process has a long way to go to be considered sustainable, citing pricing, priorities, customer education and awareness as "hindering the product from being sustainable." Interviewee #5 agreed that the company has sustainable ideas, but the sustainable goals end up "diluted" when it comes to production, noting "cost is a paramount."

The company does not offer repair or mending services. Interviewee #4 stated that she could see an opportunity for a company similar to hers to implement a mending service like Patagonia, Levi's, or Tommy Hilfiger. However, she stated that her company is simply too large and structured to implement a mending service that would "need to be nimble and have a small team to focus on how to execute" the service. She believes that there are too many "hoops, and levels, and processes, and checkmarks you have to get," which makes it difficult to get "real innovation off the ground." If their competitors are not doing it, or have the potential for "billion

dollars on the bottom line" and can "prove it because there are examples in the marketplace," the interviewee's company wouldn't be interested. Interviewee #5 agreed and stated that the company would need a "true monetary incentive" to consider adding a mending service.

Interviewee #4 stated that many people associate mending with higher end items, but those are inaccessible to many people. Instead of offering mending services, companies could focus on making clothing that will have a long use phase that will encourage customers to mend and take care of the clothing, so they *want* to keep it for longer. Interviewer #5 also suggested that companies could accept damaged clothing from customers and provide the customer with a monetary voucher in return. Then, the company becomes responsible for the damaged clothing and is obligated to reuse it in some way. However, she believes this would take time and the company would have to accept that there would not be an immediate return.

Interviewee #4 suggested a potential partnership for their company with a brand that already offers mending services. She said that she does not see mending tips over social media being successful because her company wants customers to come in and buy new things. She also suggested mending centers in hotspots around the world where customers can bring things to be mended. She thinks that sustainability should be "an easy part of your day, of your life" and that there should not be barriers to those who want to participate.

Emergent themes

Several common themes emerged from the interviews that were helpful in addressing RQ5 (What are the potential applications of mending within the fashion industry to encourage sustainability?). Common themes are shown in Table 12.

Interview #1 explored a practical application for mending within the fashion industry in the form of an in-house mending service. This type of service is comparable to an independent repair service, but they only repair damaged products purchased from that brand, often free of charge. Brands can use this model to extend the use phase of their products, while at the same time build customer loyalty and trust. This model appears to be suitable for brands that sell quality products at a higher price point.

However, the in-house mending service model may not be a solution to larger brands that offer products at a lower price point, based on opinions shared in Interviews #3 and #4. Throughout the interviews, several alternatives to this traditional model were suggested. These suggestions included partnering with a company with an existing mending service and educating consumers to mend on their own time by offering mending classes and upcycling tips. Some interviewees noted that discovering their target customers' potential motivations for mending would be essential to providing the right type of mending service, if any.

Table 12.

Common themes expressed in fashion industry expert interviews

	Interview #1	**Interview #2**	**Interview #3**	**Interview #4**
Employer offers mending services	X			
Brands could encourage lengthening garment lifecycle			X	X
Offered alternatives to traditional mending services			X	X
Repair services can foster brand trust and loyalty	X			
Targeting the right consumer motivation for mending			X	X
Admiration for Patagonia's mending services	X			X

Suggested partnerships to help offer mending services		X		X
Growing interest in sustainability for younger generations		X	X	
Importance of consumer education	X			X
Traditional mending services are not scalable			X	X

CHAPTER V

DISCUSSION AND CONCLUSION

This research revealed several things about mending's place within the fashion industry and its potential to offer a practical way for consumers to extend the use phase of a garment. Based on the data collected, mending may be3 relevant to several levels of the fashion industry, including consumers, the consumer education sector, and retailers. However, in order for mending to have a positive impact on the fashion industry, multiple barriers must be overcome. The following section discusses findings and shares suggestions, based on the results of the online survey, virtual mending workshop, and fashion industry expert interviews, to circumvent these barriers and encourage mending as a sustainable practice for consumers.

Consumer Mending Habits

The first goal of this research was to explore consumer mending habits (RQ1 - RQ3). A number of barriers to mending were discovered in the literature and subsequently tested, using an online survey. The goal was to provide an updated account of current barriers to mending, taking into account the possible effects of the COVID-19 pandemic. The survey also explored whether

or not participants were interested in making sustainable choices to begin with. If consumers are not interested in sustainability, then promoting mending as a sustainable practice may be futile. Based on the results of the online survey, many participants were interested in making sustainable fashion choices, yet most also found these choices difficult to make. This indicates a need for easy, accessible options to help consumers make more sustainable choices. The use phase of a garment presents an opportunity for consumers to practice sustainability by delaying clothes' placement in a landfill. Consumers have the power and means to make a positive impact on the amount of waste that ends up in landfills, similar to the WWI conservation efforts noted in the literature (Claudio, 2007). Mending presents such an opportunity for consumers to easily participate in extending the use phase of garments that may otherwise be disposed of. However, in order for mending to act as an easy, sustainable practice, several barriers must be overcome.

The first goal of the online survey was to identify which barriers to mending applied to the survey sample. Several barriers identified in the literature also applied to the survey sample, including barriers relating to skills, quality/value of purchased clothing, accessibility, and perceptions of mending itself. Barriers relating to skills include lack of skills (McLaren & McLauchlen, 2015; Norum, 2013), both hand and machine sewing. Barriers relating to whether or not clothing is worth mending include ease of purchase of new clothing (McLaren & McLauchlen, 2015) and initial low cost of clothing (Gwilt, 2013; McLaren & McLauchlen, 2015). Barriers relating to perceptions of the mending activity itself include cost of mending (McLaren & McLauchlen, 2015), access to materials, association with poverty (Gwilt, 2012; McLaren & McLauchlen, 2015; König, 2013), perception of mending as a chore (König, 2013), perception of mending as a solitary activity (Holroyd, 2016), perception that mending is an

unenjoyable activity (Holroyd, 2016), and concern that mending will alter the size and/or fit of clothing (Diddi & Yan, 2019).

These barriers appeared to be prevalent among survey respondents who do not practice mending and presented a clear distinction in the participants' tendency to mend clothing, or lack thereof. Alternatively, a number of barriers identified in the literature did not appear to apply to the sample, including clothing being too trendy, accessibility of professional mending services (Gwilt, 2013), and association of mending with traditional housewives (McLaren & McLauchlen, 2015). Addressing the identified barriers is key to encouraging people to take up mending as a sustainable habit.

The second goal of the online survey was to determine what role, if any, demographics and perceptions of sustainability played in participants' relationship with mending. Gender identity, age, and professional activity were the demographics chosen to analyze. Gender identity appeared to have a significant impact on participants' decision to mend clothing, with female participants being more likely to practice mending than their male counterparts. This was unsurprising, as the literature focused heavily on female practitioners of mending and mending has historically been considered "women's work" (McLaren & McLauchlen, 2015). However, this data countered evidence from the literature that women may be more resistant to mending due to Second Wave Feminism and rejection of traditional gender roles (König, 2013). This did not appear to be the case for this sample. However, these results indicate that further research is needed to determine what barriers specifically prevent male consumers from practicing mending. Unlike gender identity, age and professional activity did not appear to have an influence over choice to mend.

In addition to the demographics discussed above, participants' perceptions of sustainable fashion were also explored. The goal was to determine if participants' perceptions of sustainable fashion had any influence on their choice to mend. Participants who practiced mending placed a higher importance on making sustainable fashion choices, despite finding these choices similarly difficult to make, compared to the non-mending group. Participants who practiced mending were also more likely to actively seek out sustainable options and believe that their choices had a positive impact on the sustainable fashion movement. This indicates that the non-mending group is less likely to value making sustainable choices, seek out sustainable choices, or believe their choices have an impact on the sustainable fashion movement. In other words, non-menders from this sample were less enthusiastic about sustainable fashion than menders, indicating that this lack of enthusiasm may present a barrier to mending for this group. If this is the case, non-menders may require other motivators to encourage mending, as sustainability may not be an adequate motivator. Alternatives could include economic benefits, psychological benefits, or creative expression.

Lastly, the literature indicated that the COVID-19 pandemic prompted a renewed interest in home sewing (relating to producing cloth face coverings at home due to national shortages of manufactured face masks early in the pandemic) and a heightened awareness of individual overconsumption. This may have contributed new interest in home sewing, darning, and mending (Lwanga, 2020). The combination of renewed interest in home sewing and increased awareness of overconsumption may be timely so far as encouraging consumer interest in mending. This idea was explored through the online survey to determine whether or not the pandemic had an impact on participants' relationship with mending. However, while some participants appeared to reconsider their personal consumption of material items and purchase

less clothing overall as a result of the pandemic, it appeared to have little influence on people who did not already practice mending. In other words, the pandemic did not cause non-menders to take up mending. However, this does not necessarily mean that there is no potential to encourage mending in the current climate. Perhaps, if other barriers to mending were addressed, non-menders may still be encouraged to begin mending.

Overall, the online survey focused on what guided the individual consumer to practice mending or not. A number of barriers and non-barriers were discovered and compared to those found in the literature. Additionally, gender identity and perceptions of sustainability were shown to have an effect on whether or not survey participants chose to mend, with female participants and those who cared about sustainable fashion choosing to mend more often. Lastly, despite an uptick in home sewing and reflection on material consumption, the COVID-19 pandemic did not appear to have an impact on participant's decision to mend or not. The next section will discuss the virtual mending workshop and its potential to overcome certain barriers to mending discovered through the online survey.

Mending in an Educational Setting

The second goal for this study was to test the viability of mending in an educational setting and measure its impact on participants (RQ4) through a virtual mending workshop, hosted by Praxis Fiber Workshop. The results of this research have a direct benefit to the auxiliary level of the fashion industry, specifically the consumer education sector. Praxis Fiber Workshop is the most immediate organization to benefit from this research. By hosting the virtual mending workshop for this study, Praxis was able to gauge their community's interest in

mending workshops, the success of the workshop, and determine whether or not to host similar workshops in the future. In conversation with the workshop instructor, she was enthusiastic about repeating the mending workshop at Praxis and had already recreated the workshop in a different educational setting (arts higher education), indicating a high level of success from her perspective.

The virtual mending workshop made use of several suggestions from the literature review in regard to overcoming barriers to mending. The first was presenting mending as a fun, enjoyable, and/or creative activity (Schofield-Tomschin, 1999). Additionally, other studies suggested hosting group mending activities, to make the experience more enjoyable and social (McLaren & McLauchlen, 2015; Gwilt, 2012). The virtual mending workshop drew on both of these suggestions by using a group setting to present mending as a social and enjoyable activity. Despite the virtual setting, participants engaged with the instructor and each other by asking questions and making comments and recommendations, respectively. Presumably, had the workshop been in-person, there would have been opportunity for additional socialization amongst participants. At the end of the workshop, several participants noted that they had enjoyed the workshop, indicating that the workshop was fun, as opposed to a lonely chore (König, 2013; Holroyd, 2016).

The mending workshop can be considered successful for other reasons as well. Multiple studies in the literature explored the psychological benefits of knitting, a practice similar to mending. Researchers cited knitting as a source of "relaxation and concentration" (Holroyd, 2016, p. 13) and discussed the benefits of knitting in a group setting, which include increasing feelings of happiness and relaxation (Kingston, 2012). Group creative activities in general were shown to have a positive effect on individuals suffering from mental health issues (Caddy, 2012).

However, as previously noted, no studies had been completed to measure potential psychological benefits of mending in a group setting. As a result of attending the workshop at Praxis Fiber Workshop, participants experienced an increase in positive feelings and decrease in negative feelings, based on the PANAS instrument results. This indicates that mending in a group setting has a positive effect on participants' mood, similar to knitting. These positive feelings could encourage consumers to participate in future workshops, practice mending on their own, or form their own mending groups.

In addition to the apparent psychological benefits of mending in a group educational setting, the workshop also resulted in a clear increase in participants' confidence in their mending skills. Post-workshop, participants indicated their interest in trying the mending techniques that they had learned at home, showing an intent to practice mending beyond the workshop. The virtual mending workshop was successful in equipping participants with the skills necessary for mending and gave them the confidence to pursue mending on their own.

Due to the increase in positive feelings and confidence resulting from the workshop, the majority of barriers found in the literature and tested in the online survey could be addressed through group mending workshops. Learning mending in an educational setting was shown to help participants gain skills, confidence, and an improved mood. These results could help overcome certain barriers, such as lack of skills (Gwilt, 2012) (necessary skills are taught during the workshop), perception that mending is a solitary activity (Holroyd, 2016) (group workshops can encourage socializing), and the perception that mending is unenjoyable or a chore (König, 2013) (participants from this study stated that they enjoyed the mending workshop and the PANAS instrument showed an overall positive effect on mood).

Additionally, a mending workshop may help address perceived lack of time by providing participants with a dedicated time to practice mending. The fear that mending will negatively impact the appearance or fit of clothing (Diddi & Yan, 2019) could be overcome by practicing mending in a workshop. Because the workshop improved participants' confidence in their mending skills, there would be less room for error that may negatively affect a garment's appearance. Visible mending that draws special attention to the mended area may also address this barrier, by embellishing the appearance of the garment. While not specifically tested in the virtual mending workshop, visible mending techniques could be easily incorporated to help making mending more creative, form an emotional attachment between mender and the mended item, and overcome the association between mending and poverty (Davis, 2020; Gwilt, 2012; McLaren & McLauchlen, 2015; Mugge, 2010; Laitala, 2013; McLaren & McLauchlen, 2015). Lastly, mending workshops may help overcome the barrier of lack of access to mending materials by showing participants which materials are necessary, where to find them, or even providing those materials.

Mending in an educational setting appeared to be a highly successful way to encourage mending and promote sustainability within the fashion industry. As detailed in the previous section, educational mending workshops have the potential to address several barriers to mending that were discovered in the results of the online survey. Additionally, the mending workshop resulted in an increase in positive feelings and a decrease in negative feelings for participants.

Given the success of the mending workshop, it has the potential to serve as a model for other organizations, nonprofit or otherwise. These could take place in person or virtually (over Zoom or social media). While a more formal workshop model was used in this study, similar

events could take place using a variety of formats. Social media platforms such as Instagram or TikTok could be used by organizations to share condensed mending tips, while longform platforms such as Instagram Live or YouTube may be good platforms for organizations, brands, or retailers to host workshops. Additionally, it may be possible to promote mending in a non-educational social group setting as well. Groups of consumers (virtual or in-person) could gather to collaborate, share mending tips, and problem solve together. Either way, consumer education appears to be instrumental in promoting mending as a sustainable practice.

Potential for Mending in the Industry

The final goal of this research was to explore applications for mending within the fashion industry, based on interviews with fashion industry professionals (RQ5). During the interviews, several applications for mending within the retail level of the fashion industry were suggested and compared. Based on the size, product offering, and target customer of the retailer, the fashion industry expert interviewees indicated a number of ways mending may be incorporated into a successful business model.

While it was noted in the literature that independent repair services have "little to no presence in contemporary mainstream society" (Bennett, 2012, p. 55), Interviewee #1 noted that her company operates a service, similar to a traditional independent repair service, that provides in-house mending for damaged products. For smaller brands that offer items at a higher price point, mending services may be a good way to not only encourage sustainability among customers, but also gain brand loyalty and increase confidence in a product, according to Interview #1. This style of service involves customers bringing or mailing their damaged items

to a brand to be mended and returned. These services could be offered in-house, or through a partnership with another brand or company that already offers similar services. Brands that promote this style of mending service should be sure to market them appropriately to ensure customers are aware that the services are offered and understand the benefits for both themselves and the environment (Interview #1). As noted in both Interviews #1 and #2, customers are not always aware of or know to ask for these services, thus reducing the impact they can have on the longevity of the brand's products.

This traditional style of mending service may not be appropriate or scalable for larger and/or less expensive brands and retailers, as was discussed in both Interviews #3 and #4. However, alternate ideas were suggested during both interviews. In order for any brand to incorporate mending into their business model, each individual company needs to determine what might motivate their customer base to utilize a mending service, if anything (Interviews #3 and #4). Motivations could include positive feelings for the customer, moral status, connecting to a brand community, or financial necessity (Interview #3). Then, once the appropriate motivations are discovered, brands can offer a service based on those specific motivations. For example, if a brand determines that their customer base is motivated by financial necessity rather than sustainability, they may promote a mending service as a way to hold onto an expensive product for a longer time, which may appeal to thriftier customers.

Examples of alternative services could include consumer education (instructions on how to mend or style clothing to extend the use phase), a monetary incentive (voucher for returned items to be mended and resold), or partnerships with other companies that are already offering mending services (fashion related or other) (Interview #4). There may also be an opportunity here for collaboration between brands and consumer education organizations, such as Praxis

Fiber Workshop. A collaboration between organizations to teach mending skills could provide consumers with the confidence to mend (as was seen through the virtual mending workshop), as well as positive exposure for both the brand (bolsters reputation for promoting sustainable practices) and the consumer education group (gains exposure to the retailer's customer base).

Businesses and brands also have the opportunity to at least partially address the remaining barriers related to the lack of longevity and cheapness of new clothes. While it might be unrealistic for brands to change the way they produce clothing, it is still possible to encourage consumers to value their clothing more and extend the use phase. Here is an opportunity for brands to mirror Neiman Marcus's creative standards for waste management during WWII (Mower & Pedersen, 2013). Brands can play an active role in encouraging sustainable behavior in consumers, rather than offering the sustainable service themselves. If brands encourage mending habits in ways that appeal to their customers, they could teach those customers to place a higher value on clothing. For example, if a company posts upcycling tips (ex. distressing damaged jeans in a more stylish way, cutting ripped jeans into shorts, etc.) (Interview #3) on their social media platforms, they could place the consumer in the role of the enforcer by providing education and encouragement and subsequently compel their customers to hang on to clothing for longer. This could be particularly effective if the mending causes the consumer to form an emotional bond with the visibly mended item (McLaren & McLauchlen, 2015). Companies could enlist the help of fashion and lifestyle influencers to promote mending as well. Just as Neiman Marcus made conservation both stylish and patriotic (Mower & Pedersen, 2013), influencers have the possibility of making mending stylish and sustainable by promoting visible mending.

All in all, many suggestions were given to encourage mending, from providing an actual mending service to simply encouraging consumers to practice mending in a fun or creative way. However, the interviews also seemed to indicate a level of uncertainty as to how mending explicitly fits into the current fashion industry, due to the constant demand for newness.

In summary, several conclusions can be drawn from this study. First, several barriers to mending exist and must be addressed in order to promote mending as a sustainable solution to the fashion industry. Second, these barriers may vary based on gender identity and perceptions of sustainability in the fashion industry. Third, the COVID-19 pandemic did not prompt participants who did not previously mend to begin mending.

Fourth, mending workshops were shown to be a highly successful way to encourage mending and overcome several barriers identified in the online survey. The group mending workshop provided participants with the confidence to complete mending projects and boosted participant's positive feelings.

Lastly, there are a number of ways that brands can encourage mending and overcome barriers, including offering mending services themselves or in collaboration with another company, participating in consumer education, offering monetary incentives, and encouraging consumers to mend at home.

The survey and workshop both showed a desire for consumers to mend clothing. However, the interviews showed that brands appear unsure how to involve mending into a business model in an industry that thrives on constant newness. Rather than try to encourage brands and corporations to champion mending, mending may be a better solution for consumers to address. The most notable finding from this study is that education is key for consumers to

practice mending, as the mending workshop provided individuals with the skills and confidence to practice mending on their own.

Limitations

There were several limitations present in this study. First, the use of snowball sampling, instead of probability sampling, did not guarantee a sample that was representative of the population. Therefore, these results are not generalizable. Further research is needed to help determine whether these barriers are universal, or only applied to this sample. Snowball sampling was used as the researcher did not have access to a probability sample. Nonetheless, snowball sampling was effective in reaching a large sample size with both menders and non-menders represented, thus allowing comparative analysis of mending behavior determinants. Second, the ongoing COVID-19 pandemic resulted in several limitations to the mending workshop. Due to the pandemic, the workshop was held over Zoom, which limited the researcher's control over the data collection. For example, the researcher was unable to provide identical workshop materials to all participants.

Suggestions for future research

Suggestions for future research include a similar survey with a sample that is representative of the US population. Additionally, given the difference in mending habits between male and female consumers, more research is needed to determine barriers to mending for male consumers specifically. As the sample size for this survey was mostly white and female,

a broader population may be sought to provide a more diverse sample, including (but not limited to) participants from different races, ethnicities, sexual orientations, ideologies, education, parental status, or political beliefs (Reiners, 2021).

Future research could also explore a broader implementation of a mending workshop, perhaps in partnership with an apparel or textile company to measure consumer interest. Additionally, further research could focus on improvements and expansion on the mending workshop for Praxis in particular.

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APPENDIXES

APPENDIX A: ONLINE SURVEY QUESTIONS

You are being invited to participate in a research study. This consent form will provide you with information on the research project, what you will need to do, and the associated risks and benefits of the research. Your participation is voluntary. Please read this form carefully. It is important that you ask questions and fully understand the research in order to make an informed decision.

Purpose

The purpose of this study is to explore consumer perceptions and habits relating to sustainable fashion, mending, and the COVID-19 pandemic.

Procedures

Participation includes taking an online survey, which will take approximately 10-15 minutes to complete.

Benefits

This research will not benefit you directly. However, your participation in this study will help us to better understand consumer perceptions and barriers to certain aspects of sustainable fashion and mending.

Risks and Discomforts

There are no anticipated risks beyond those encountered in everyday life.

Confidentiality

No identifying information will be collected.

Future Research

Your de-identified information may be used by or shared with other research without your additional consent.

Voluntary

Participation in this study is voluntary. You may discontinue participation at any time without penalty or loss of benefits.

If you have any questions or concerns about this research, you may contact Dr. Mourad Krifa at krifam@kent.edu or Mathilda Savocchia at msavocch@kent.edu. This project has been approved by the Kent State University Institutional Review Board. If you have any questions about your rights as a research participant or complaints about the research, you may call the IRB at 330-672-2704.

To participate, answer the question below. If you do not want to participate, exit the window.

I am….

1. Under 18 years old
2. 18 years old or older

Demographics

1. Which of the following best describes you?
    a. 18-24 years old

   b. 25-34 years old
   c. 35-44 years old
   d. 45-54 years old
   e. 55-64 years old
   f. 65-74 years old
   g. 75+ years old

2. Which of the following *best* describes you?
   a. Female
   b. Male
   c. Nonbinary
   d. Other (Please specify)
   e. I prefer not to say.

3. Which of the following *best* describes you?
   a. Asian or Pacific Islander
   b. Black or African-American
   c. Hispanic or Latino
   d. Native American or Alaskan Native
   e. White or Caucasian
   f. Multiracial or biracial
   g. Other race/ethnicity not specified here (Please specify)
   h. I prefer not to say.

4. Which of the following best describes your *current* place of residence?
   a. North America/Central America

   b. South America
   c. Europe
   d. Africa
   e. Asia
   f. Australia
   g. Caribbean Islands
   h. Pacific Islands
   i. Other (Please specify)
   j. Prefer not to say

5. What is the *highest* level of education you have received?
   a. Some High School
   b. High School
   c. Some college or university
   d. Bachelor's degree
   e. Master's degree
   f. Ph.D. or higher
   g. Trade or technical school
   h. Prefer not to say
   i. Other (please specify)

6. What is your *current* employment status?
   a. Full-time employment
   b. Self-employed
   c. Part-time employment

   d. Full-time freelancing
   e. Unemployed (looking for work)
   f. Unemployed (not looking for work)
   g. Student
   h. Inability to work
   i. Other (Please specify)

7. What is your annual *household* income?
   a. Less than $25,000
   b. $25,000 - $50,000
   c. $50,000 - $100,000
   d. $100,000 - $200,000
   e. More than $200,000
   f. Prefer not to say

8. Which of the following *best* describes your professional activity (or education, if you selected “student”)?
   a. Fashion
   b. Retail
   c. Textiles
   d. Computing or IT
   e. Engineering or manufacturing
   f. Hospitality or events
   g. Arts, Entertainment, or Recreation
   h. Legal Services

i. Advertising or marketing

j. Insurance or financial services

k. Education

l. Other (please specify)

Sustainability

Please indicate how much you agree with the following statements.

1. Making sustainable decisions when shopping for fashion and apparel is important to me.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
2. I actively look for ways to personally make the fashion industry more sustainable.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
3. Making sustainable fashion choices is difficult.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree

d. Somewhat disagree

e. Strongly disagree

4. My personal sustainable fashion choices make the fashion industry more sustainable.

    a. Strongly agree

    b. Somewhat agree

    c. Neither agree nor disagree

    d. Somewhat disagree

    e. Strongly disagree

Mending

PLEASE READ: For the purpose of this survey, the definition of "mending" is as follows: Repairing, repurposing, or refreshing damaged or tired clothing in a way that prompts the consumer to continue wearing it for an extended period of time

Examples of mending include, but are not limited to, stitching a hole, darning a sock, covering a hole with a decorative patch or embroidery, dyeing a stained garment, or altering a garment (cropping a t-shirt, cutting jeans into shorts, etc.)

Please indicate how much you agree with the following statements.

1. I know how to sew by hand.

    a. Strongly agree

    b. Somewhat agree

    c. Neither agree nor disagree

    d. Somewhat disagree

    e. Strongly disagree

2. I know how to use a sewing machine.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
3. Mending clothing is a sustainable habit.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
4. When an article of clothing becomes damaged (torn, ripped, pilling, stained, etc.), I make an effort to mend the damage.
    a. True
    b. False

Barriers to mending

Please indicate how much you agree with the following statements.

1. My clothing is too cheap to bother mending.
    a. Strongly agree
    b. Somewhat agree

   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

2. It's not worth mending my clothing because they will soon be out of style.
   a. Strongly agree
   b. Somewhat agree
   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

3. It is easier to purchase new clothing than it is to repair damaged clothing.
   a. Strongly agree
   b. Somewhat agree
   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

4. Only investment pieces, or articles of clothing that are high quality, timeless styles with resale potential, are worth repairing.
   a. Strongly agree
   b. Somewhat agree
   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

5. I possess the necessary skills to effectively mend damaged clothing.

   a. Strongly agree
   b. Somewhat agree
   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

6. Mending clothing is expensive.
   a. Strongly agree
   b. Somewhat agree
   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

7. I could easily find a professional repair service to repair damaged clothing.
   a. Strongly agree
   b. Somewhat agree
   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

8. I own, or could easily find, the materials necessary to mend clothing at home.
   a. Strongly agree
   b. Somewhat agree
   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

9. Mended clothing looks shabby.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
10. Mending reminds me of traditional housewives.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
11. The role and tasks of the traditional housewife are outdated.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
12. Mending is a chore.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree

e. Strongly disagree

13. Mending is a solitary activity.

a. Strongly agree

b. Somewhat agree

c. Neither agree nor disagree

d. Somewhat disagree

e. Strongly disagree

14. Mending is enjoyable.

a. Strongly agree

b. Somewhat agree

c. Neither agree nor disagree

d. Somewhat disagree

e. Strongly disagree

15. I don’t have time to mend clothing.

a. Strongly agree

b. Somewhat agree

c. Neither agree nor disagree

d. Somewhat disagree

e. Strongly disagree

16. I worry that mending will alter the appearance of my clothes negatively.

a. Strongly agree

b. Somewhat agree

c. Neither agree nor disagree

d. Somewhat disagree

e. Strongly disagree

17. I worry that my clothing will no longer fit after mending.

    a. Strongly agree

    b. Somewhat agree

    c. Neither agree nor disagree

    d. Somewhat disagree

    e. Strongly disagree

COVID-19 pandemic

Please indicate how much you agree with the following statements.

1. The COVID-19 pandemic has made me reconsider my consumption of material goods.

    a. Strongly agree

    b. Somewhat agree

    c. Neither agree nor disagree

    d. Somewhat disagree

    e. Strongly disagree

2. As a result of the COVID-19 pandemic, I have purchased less clothing on average than before the pandemic.

    a. Strongly agree

    b. Somewhat agree

    c. Neither agree nor disagree

    d. Somewhat disagree

    e. Strongly disagree

3. As a result of the COVID-19 pandemic, I have started engaging in new sustainable practices.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
4. During the ongoing COVID-19 pandemic, I have made an effort to learn a new skill(s).
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
5. During the ongoing COVID-19 pandemic, I mended an article of clothing.
    a. True
    b. False
6. During the ongoing COVID-19 pandemic, I used sewing or DIY to construct a face mask/covering.
    a. True
    b. False
7. During the ongoing COVID-19 pandemic, someone I know used sewing or DIY to construct a face mask/covering.

   a. True
   b. False

8. During the ongoing COVID-19 pandemic, I consulted an outside source (YouTube video, blog post, social media, friend or relative, etc.) to gain more knowledge about how to sew a homemade mask or face covering.
   a. True
   b. False
9. During the ongoing COVID-19 pandemic, I wanted to make my own face mask, but did not feel I had the necessary skills.
   a. Strongly agree
   b. Somewhat agree
   c. Neither agree nor disagree
   d. Somewhat disagree
   e. Strongly disagree

APPENDIX B: VIRTUAL MENDING WORKSHOP PRE-TEST

Consent to Participate in a Research Study

Study Title: *Reviving mending to benefit the individual, community & industry: a mixed method study*

Principal Investigator: *Dr. Mourad Krifa & Mathilda Savocchia*

You are being invited to participate in a research study. This consent form will provide you with information on the research project, what you will need to do, and the associated risks and benefits of the research. Your participation is voluntary. Please read this form carefully. It is important that you ask questions and fully understand the research in order to make an informed decision.

Purpose

This study attempts to explore the effects of a mending on an individual's mood, confidence, and perceptions of mending and sustainability.

Procedures

You will be asked to complete a short pre-test and post-test questionnaires where you will assess your own mood, as well as your perceptions of sustainability in fashion and confidence in mending.

Benefits

This research may benefit you by helping you learn new skills relating to mending and sustainability that can be applied in your everyday life.

Risks and Discomforts

There are no anticipated risks beyond those encountered in everyday life.

Confidentiality

No identifying information will be collected.

Future Research

Your de-identified information may be used by or shared with other research without your additional consent.

Voluntary

Participation in this study is voluntary. You may discontinue participation at any time without penalty or loss of benefits.

If you have any questions or concerns about this research, you may contact Mourad Krifa at mkrifa@kent.edu or Mathilda Savocchia at msavocch@kent.edu. This project has been approved by the Kent State University Institutional Review Board. If you have any questions about your rights as a research participant or complaints about the research, you may call the IRB at 330-672-2704.

Consent Statement and Signature

I have read this consent form and have had the opportunity to have my questions answered to my satisfaction. I voluntarily agree to participate in this study. I understand that a copy of this consent will be provided to me for future reference.

1. Yes, I consent to participate in this research study.
2. No, I do not consent to participate in this research study.

The following questions will be used to match your pre-test answers to your post-test answers, without collecting any identifying information. Please remember the answers to your questions for the post-test.

1. What is your birth MONTH?
    a. January
    b. February
    c. March
    d. April
    e. May
    f. June
    g. July
    h. August
    i. September
    j. October
    k. November
    l. December
2. What was the name of your first pet?

Please indicate to what extent you agree with the following statements.

1. I am passionate about sustainability in the fashion industry.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
2. Making sustainable decisions when shopping for fashion and apparel is important to me.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
3. I consider mending a sustainable habit.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
4. I have mended clothing before.
    a. True
    b. False
5. I am confident in my ability to mend clothing.

a. Strongly agree

b. Somewhat agree

c. Neither agree nor disagree

d. Somewhat disagree

e. Strongly disagree

APPENDIX C: VIRTUAL MENDING WORKSHOP POST-TEST

Please answer the following questions with the same answers as you provided on the pre-test.

1. What is your birth MONTH?
    a. January
    b. February
    c. March
    d. April
    e. May
    f. June
    g. July
    h. August
    i. September
    j. October
    k. November
    l. December
2. What was the name of your first pet?

Please indicate to what extent you agree with the following statements:

1. I am passionate about sustainability in the fashion industry.
    a. Strongly agree
    b. Somewhat agree

    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree

2. Making sustainable decisions when shopping for fashion and apparel is important to me.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
3. I consider mending a sustainable habit.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree
    e. Strongly disagree
4. I have mended clothing before.
    a. True
    b. False
5. I am confident in my ability to mend clothing.
    a. Strongly agree
    b. Somewhat agree
    c. Neither agree nor disagree
    d. Somewhat disagree

    e. Strongly disagree

6. I will try some or all of these mending techniques at home.

    a. Strongly agree

    b. Somewhat agree

    c. Neither agree nor disagree

    d. Somewhat disagree

    e. Strongly disagree

APPENDIX D: FREQUENCIES OF PARTICIPANT RESPONSES TO SURVEY

Respondents' perceptions of mending-related skills

Statement	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
"I know how to sew by hand."	47.1% (n=215)	34.9% (n=159)	0.9% (n=4)	7.9% (n=36)	9.2% (n=42)
"I know how to use a sewing machine."	34.5% (n=157)	32.5% (n=148)	2.0% (n=9)	10.8% (n=49)	20.2% (n=92)
"I possess the necessary skills to effectively mend damaged clothing."	24.6% (n=112)	41.9% (n=191)	5.0% (n=23)	15.6% (n=71)	12.9% (n=59)
Statement	**True**	**False**			
"When an article of clothing becomes damaged (torn, ripped, pilling, stained, etc.), I make an effort to mend the damage."	79.2% (n=361)	20.8% (n=95)			

Respondents' perception of sustainable fashion

Statement	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
"Making sustainable decisions when shopping for fashion and apparel is important to me."	27.7% (n=126)	46.6% (n=212)	18.2% (n=83)	5.7% (n=26)	1.8% (n=8)
"I actively look for ways to personally make the fashion industry more sustainable."	14.1% (n=64)	25.9% (n=118)	33.4% (n=152)	16% (n=73)	10.5% (n=48)
"Making sustainable fashion choices is difficult."	22.4% (n=102)	45.9% (n=209)	18.7% (n=85)	10.5% (n=48)	2.4% (n=11)
"My personal sustainable fashion choices make the fashion industry more sustainable."	9.0% (n=41)	27.9% (n=127)	42.3% (n=193)	14.3% (n=65)	6.6% (n=30)

"Mending clothing is a sustainable habit."	60.4% (n=275)	27.9% (n=127)	6.8% (n=31)	2.2% (n=10)	2.6% (n=12)

Respondents' perception of whether clothing is worth mending

Statement	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
"My clothing is too cheap to bother mending."	2.2% (n=10)	21.3% (n=97)	16.9% (n=77)	37.5% (n=171)	22.1% (n=101)
"It's not worth mending my clothing because they will soon be out of style."	0.7% (n=3)	7.5% (n=34)	11.6% (n=53)	35.1% (n=160)	45.2% (n=206)
"It is easier to purchase new clothing than it is to repair damaged clothing."	12.7% (n=58)	36.4% (n=166)	10.5% (n=48)	25.9% (n=118)	14.5% (n=66)
"Only investment pieces, or articles of clothing that are high quality, timeless styles with resale potential, are worth repairing."	9.6% (n=44)	25.4% (n=116)	8.8% (n=40)	28.5% (n=130)	27.6% (n=126)

Participants' perceptions of the mending activity

Statement	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
"Mending clothing is expensive."	1.3% (n=6)	9.6% (n=44)	15.1% (n=69)	37.5% (n=171)	36.4% (n=166)
"I could easily find a professional repair service to repair damaged clothing."	17.8% (n=81)	33.8% (n=154)	13.6% (n=62)	24.1% (n=110)	10.7% (n=49)
"I own, or could easily find, the materials necessary to mend clothing at home."	36.8% (n=168)	35.7% (n=163)	6.8% (n=31)	14.3% (n=65)	6.4% (n=29)

"Mended clothing looks shabby."	0.2% (n=1)	11.0% (n=50)	19.6% (n=89)	42.3% (n=192)	26.9% (n=122)
"Mending reminds me of traditional housewives."	6.4% (n=29)	29.2% (n=133)	24.1% (n=110)	21.9% (n=100)	18.4% (n=84)
"The role and tasks of the traditional housewife are outdated."	26.8% (n=122)	25.5% (n=116)	15.2% (n=69)	16.5% (n=75)	16.0% (n=73)
"Mending is a chore."	11.9% (n=54)	43.3% (n=197)	17.6% (n=80)	19.8% (n=90)	7.5% (n=34)
"Mending is a solitary activity."	17.4% (n=79)	39.1% (n=178)	23.7% (n=108)	15.4% (n=70)	4.4% (n=20)
"Mending is enjoyable."	12.3% (n=56)	35.9% (n=163)	25.6% (n=116)	16.7% (n=76)	9.5% (n=43)
"I don't have time to mend clothing."	12.3% (n=56)	25.3% (n=115)	17.8% (n=81)	32.2% (n=146)	12.3% (n=56)
"I worry that mending will alter the appearance of my clothes negatively."	3.7% (n=17)	26.4% (n=120)	22.7% (n=103)	28.6% (n=130)	18.5% (n=84)
"I worry that my clothing will no longer fit after mending."	1.8% (n=8)	13.4% (n=61)	22.2% (n=101)	33.4% (n=152)	29.2% (n=133)

Respondents' perceptions of the COVID-19 pandemic

Statement	**Strongly agree**	**Somewhat agree**	**Neither agree nor disagree**	**Somewhat disagree**	**Strongly disagree**
"The COVID-19 pandemic has made me reconsider my consumption of material goods."	32.5% (n=148)	33.6% (n=153)	17.6% (n=80)	10.8% (n=49)	5.5% (n=25)
"As a result of the COVID-19 pandemic, I have purchased less clothing on	47.9% (n=218)	25.7% (n=117)	10.5% (n=48)	9.9% (n=45)	5.9% (n=27)

average than before the pandemic."					
"As a result of the COVID-19 pandemic, I have started engaging in new sustainable practices."	13.4% (n=61)	36.6% (n=166)	26.2% (n=119)	15.0% (n=68)	8.8% (n=40)
"During the ongoing COVID-19 pandemic, I have made an effort to learn a new skill(s)."	22.9% (n=104)	34.7% (n=158)	15.8% (n=72)	18.0% (n=82)	8.6% (n=39)
Statement	**True**	**False**			
"During the ongoing COVID-19 pandemic, I mended an article of clothing."	65.1% (n=296)	34.9% (n=159)			
"During the ongoing COVID-19 pandemic, I used sewing or DIY to construct a face mask/covering."	40.9% (n=186)	59.1% (n=269)			
"During the ongoing COVID-19 pandemic, someone I know used sewing or DIY to construct a face mask/covering."	92.3% (n=420)	7.7% (n=35)			
"During the ongoing COVID-19 pandemic, I consulted an outside source (YouTube video, blog post, social media, friend or relative, etc.) to gain more knowledge about how to sew a homemade mask or face covering."	55.6% (n=253)	44.4% (n=202)			
Statement	**Strongly agree**	**Somewhat agree**	**Neither agree nor disagree**	**Somewhat disagree**	**Strongly disagree**
"During the ongoing COVID-19 pandemic, I wanted to make my own face mask, but did not feel I had the necessary skills."	11.5% (n=52)	17.0% (n=77)	15.9% (n=72)	19.4% (n=88)	36.3% (n=165)

APPENDIX E: POSITIVE AND NEGATIVE AFFECT SCHEDULE (PANAS)

Indicate the extent you have felt this way over the past week.		**Very slightly or not at all**	**A little**	**Moderately**	**Quite a bit**	**Extremely**
PANAS 1	Interested	1	2	3	4	5
PANAS 2	Distressed	1	2	3	4	5
PANAS 3	Excited	1	2	3	4	5
PANAS 4	Upset	1	2	3	4	5
PANAS 5	Strong	1	2	3	4	5
PANAS 6	Guilty	1	2	3	4	5
PANAS 7	Scared	1	2	3	4	5
PANAS 8	Hostile	1	2	3	4	5
PANAS 9	Enthusiastic	1	2	3	4	5
PANAS 10	Proud	1	2	3	4	5
PANAS 11	Irritable	1	2	3	4	5
PANAS 12	Alert	1	2	3	4	5
PANAS 13	Ashamed	1	2	3	4	5
PANAS 14	Inspired	1	2	3	4	5
PANAS 15	Nervous	1	2	3	4	5
PANAS 16	Determined	1	2	3	4	5

PANAS 17	Attentive	1	2	3	4	5
PANAS 18	Jittery	1	2	3	4	5
PANAS 19	Active	1	2	3	4	5
PANAS 20	Afraid	1	2	3	4	5

Scoring:

***Positive Affect Score*:** Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher levels of positive affect. Mean Scores: 33.3 (SD±*7.2)*

***Negative Affect Score*:** Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower levels of negative affect. Mean Score: 17.4 (SD ± 6.2)

Your scores on the PANAS: Positive: ____ Negative: ____