

Design and Development of a Transformable and Detachable Capsule Collection

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Abstract:

Transformable fashion and detachable fashion are both among the rising macro trends. A capsule collection is a brilliant way of styling a collection in many different ways that will ultimately reduce the wardrobe size per consumer. Minimizing the over production, and over consumption of clothing in the name of fast fashion is a problem in the long run affecting the rate of waste generation on the surface of the earth. This project work focuses on creating an outcome of a capsule collection putting together transformable and detachable fashion together incorporating Indian roots of fashion.

Key words: Detachable, transformable, wardrobe size, sustainable

Introduction

In today's world we can see that the fashion industry has grown so far ahead, there are a lot of innovations involving clothing making techniques. The fashion industry works in a much systemised manner right from the fashion design process which involves the trend prediction, inspirations, colour predictions, designing, illustration, pattern making, clothing development, upto the runway. Along with the fast running, fast fashion has become a major jargon in the industry.

Many factors of ethics are compromised to make the products cheap which include treatment of the harmful chemicals use in different industries before letting them into the water bodies, providing the right wages to the common industrial workers. The environment is already at a very bad state today. Only now people have started to realize the changes the industrialization is bringing to our environment. The generation that is living today is already victimized to the

thorns of environmental pollution. Our ancestors refused to foresee the impacts of pollution on their children, who now are at least aware of its consequences. Fixing the problems corresponding to the fashion industry can bring about a huge change since it is the second largest pollutant amongst all the other kinds of industries.

Transformable fashion is where any item of clothing is produced in such a way that the appearance of it can be altered easily to create many outcomes. It is an umbrella term which includes convertible fashion where a dress can be converted either reversible or in its appearance and detachable fashion where elements can be removed and attached. Transformable clothing is purely created to satisfy the aesthetic needs of a wearer, with which one can avoid buying many clothes to create different looks.

There is another concept of fashion called the modular fashion which is called the modular fashion. The clothing items which have removable or detachable pieces come under modular fashion. These pieces are designed in such a way that the wearer can change the way the outfits look to suit all the changing tastes and needs over time.

The fashion that includes the manipulation of an outfit or look by addition and removal of supplementary pieces of clothing by using zippers, fastenings is known as detachable fashion. The main piece in the outfit remains complete without the attachments. The addition or subtraction of elements makes the outfit suitable for different occasions like conversion of a formal wear to a party wear.

Literature review

Transformable clothing offers multiple aesthetic and functional styles through various manipulative and constructive methods, which is delegated as a alternative in sustainability of the fashion industry in order to minimize excess consumption of clothing. (Chunmin Lang & Bingyue Wei (2019)) The concept of transformable design is considered multiple things all in one, it is a kind of sustainable design (Rahman and Gong 2016),

Transformable clothing can be converted into more than two different looks in which some of the characteristics and functions are shared with the original clothing. (Gam 2011), which will give the consumer more aesthetic and functional styles with minimal purchasing.

One of the purposes of transformable clothes is seen to be creation of multiple looks. While a single set of clothes can create multiple looks, it can help increase the number of times the set is being worn by transforming repeatedly into varied styles and looks which has the capacity to ultimately decrease the textile waste and total volumes of production. The fast

fashion world has taken the textile industry to be the second largest polluting industry in the surface of the earth. Since it is very easy for the consumers to get bored with their outfits and the trend is to not repeat clothes, people look for new ways to style their outfits. Thus the buying cycle of consumers increase and similarly the rate of productions to satisfy the created demand increases. Thus transformable clothes could act as a solution for this problem.

Both retailers and consumers can seek the fruit of benefit from transformable clothing. Transformable clothing give an alternative choice to consumers who wish to have a variety of different looks or functions without buying new products. Since the product is transformable, the wearer can modify the existing garment to bring out various required styles or desired styles instead of purchasing new clothes for multiple occasions. In addition to this, the design of transformable clothing is also beneficial to retailers. Due to its capacity of being convertible, the competitiveness of the product in the market can increase. The concept of transformable apparel to create different looks and increase product use frequency has been suggested as a strategy. In the retailer's point of view, it is seen as a potential revenue source as it is a way to satisfy the wearer's need for versatility and novelty. Chunmin Lang & Bingyue Wei (2019)

Fashion design can in a roundabout way influence customer conduct to a point where purchasers play a significant part in the arrangement of sustainable design. By and large, the duty of reasonable practice is ascribed to customers instead of designers (Fletcher, 2008) in light of the fact that supportable fashioners are all the more regularly considered responsible for the creation interaction as opposed to buyer use (Dombek-Keith and Loker, 2011). To additionally energize buyer contribution in economical style rehearses, detachable clothing design with its dynamic buyer investment empowers an all-inclusive use with less pieces of clothing (Gwilt and Rissanen, 2011).

Methodology

Design

The final design comprises of a basic tunic top, two detachable sleeves, one faux corset piece, a pinafore, a pant with a detachable piece to convert it to a faux skirt.

Survey and its responses

A survey to predict analyse the feasibility of how the concepts of sustainability, wardrobe minimization, transformable fashion and capsule collection influence the buying behaviours was conducted. The survey targeted to know about the factors of surplus clothing

owned by an individual, product use frequency, product utility, knowledge in styling, acceptance of transformable clothing.

Sample set

The survey was conducted to be narrowed down to customers whose ages range between 18 and 21, who belong to urban upper and middle class families, college going students, and young professionals. These **customers** may be regular or occasional buyers with families earning somewhere around 35k to 1 lakh per month.

Here, the questionnaire contains 10 questions. According to the rule of thumb which indicates there should be at least 10 observations per variable to form a sample size. Here the observations indicate the respondents and the variables indicate each question asked. Thus it leads to a ratio of 1:10 that concludes the minimum sample size to be 100.

Since it is a questionnaire survey, google forms were circulated among respondents that fit the category of the lifestyle parameters that were set to the target consumers.

Table 1. Survey responses

	A	B	C
SURPLUS OF CLOTHING	66% HAVE MORE THAN WHAT THEY USE	27% USE SOME CLOTHES MORE AND SOME LESS	7% USE ALL CLOTHES EQUALLY
FREQUENCY OF USE OF CLOTHES BEFORE THEY GET TOSSED	46.4% THROW THEIR CLOTHES AFTER 7 USES	25.6% USE THEIR CLOTHES UPTO 10 TIMES	21.3% USE THEIR CLOTHES UPTO 20 TIMES

FREQUENCY OF USE BASED ON CLOTHING CATEGORY LIKE FORMAL, CASUAL,PARTY WEAR	64.3% SAY IT CHANGES	30% USE ALL CLOTHES EQUALLY	
HOW WELCOME ARE THE RESPONDENTS TO NEW STYLING CONCEPTS	68.9% ARE WELCOME	19.9% DO NOT LIKE TO REPEAT CLOTHES	11.2 % SAY IT IS BENEFICIAL TO SOME AND USELESS TO OTHERS
WOULD THE UTILITY RATE INCREASE IF VERY MINIMAL CLOTHES ARE USED TO CREATE MULTIPLE LOOKS FOR MULTIPLE OCCASIONS	64.3% SAY IT IS MORE FEASIBLE	17.3% LIKE TO PICK INDIVIDUAL OUTFITS FOR DIFFERENT OCCASIONS	16.4% BUY OCCASIONAL NEUTRAL CLOTHING
AWARENESS AND INTEREST TO INVEST IN SUSTAINABLE INNOVATIONS	72.9% WERE AWARE AND INTERESTED	21.6% SAID THEY HAVE THEIR INDIVIDUAL WAYS OF STYLING	9% WANTED TO SHOW A SLOW TRANSITION IN PURCHASE BEHAVIOR

VIEWS ABOUT TRANSFORMABLE CLOTHING FOR DIFFERENT OCCASIONS	75.2% A GOOD APPROACH OF SUSTAINABILITY.	17.6% SAID IT WAS COMPROMISING ON FASHION	7.2% SAID THEIR WAYS OF DRESSING IS DIFFERENT
KNOWLEDGE IN STYLING	66.6% SAY THEY STRUGGLE	24% SAY THEY FOUND IT DIFFICULT TO MIX AND MATCH	16% SAID IT DEPENDED ON WHAT LOOKS THEY WENT FOR
VIEWS ON INVESTING ON DETACHABLE FASHION	86.8% RESPONSES WERE POSITIVE	8% WERE NEUTRAL	5.2 % WERE NOT WELCOME TO THE CONCEPT.

Survey inference

More than half of the respondents are seen to struggle to mix and match. More than three fourth of the sample population are welcome to new ways of styling. They are more aware of ill effects of fast fashion and what introduction of sustainable designs can do. More than 70% of the respondents are welcome to try detachable fashion. Based on these inferences, capsule collections with detachable fashion can be a new approach for minimizing wardrobe size and make efficient use of all the clothes they own.

Design process

Trend analysis

The season of 2021- 2022 of fall winter has one of the trends where cabaret fashion containing lights, shimmer, glitter. The next fall season will contain the 90's retro influence of chains. Cut out fashion is also one of the comeback fashion trends. Denim patchwork can also

be predicted to be a comeback fashion trend. Inspired by travel, the futuristic aviator is also a predicted trend. Figures of history and the mythological silhouettes are back in style whether in fashion design or in interior design too. Coloured leather is seen to be in trend. Since the pandemic, the oversized silhouettes are also predicted to sustain. Transparency is another predicted trend. Lace fabrics, suiting materials as seen in runways are also predicted as an upcoming trend.

Inspiration board

The inspiration taken is a delicate space drip. Space drip is the use of spacey or metallic shades of colour to bring a feeling of the life beyond earth. The perplexity of the space beyond the skies that are yet to be discovered and the feeling of inquisitiveness and the craving to know more with a touch of feminine innocence. This is a concept that comes under the concept of whimsical reminiscence. The pandemic has given us an air of uncertainty around us. We are all searching for an escapade to feel alive and lively. Whimsical reminiscence is the search of escapade and thinking beyond worldly activities. It goes across fields and explores how brands reinterpret and deliver a surreal experience to the consumers. This inspiration of whimsical reminiscence is from the vision next's Insight young which is India's trend forecasting forum.

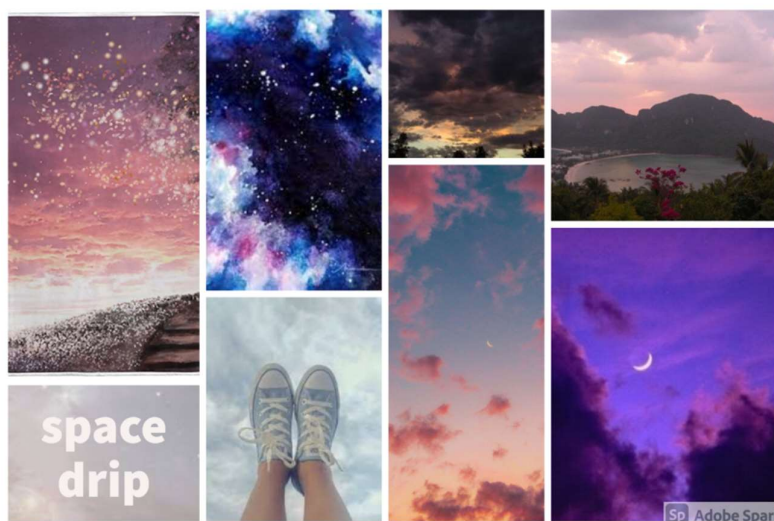


Fig 1. INSPIRATION BOARD

Mood board

The mood depicted here is to indicate the soft and calm yet intense inquisitiveness in a human being, that yearns to learn more about the life beyond what one can see and imagine.

It captures emotions that are restricted within the worldly surface and those emotions that want to flow outside what is seen and can be felt. It could be compared to that of the emotions woman who is restricted of all her freedom and wants to explore what happens in the outer world.



Fig 2. MOOD BOARD

Color story

The colour scheme that was chosen was a blue grey colour scheme.

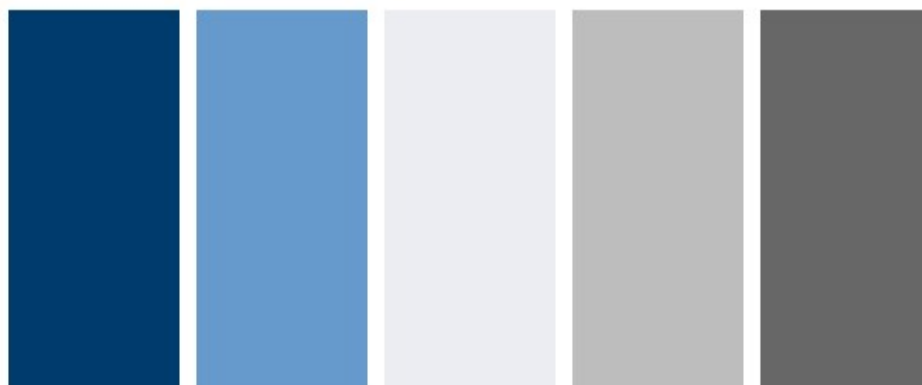


Fig 3. COLOR STORY

Fabric choice

In recent fall / winter runway shows for 2021/2022 trends were spotted in which fabrics like Lace and suiting mixes were seen widely.

SELECTED DESIGN

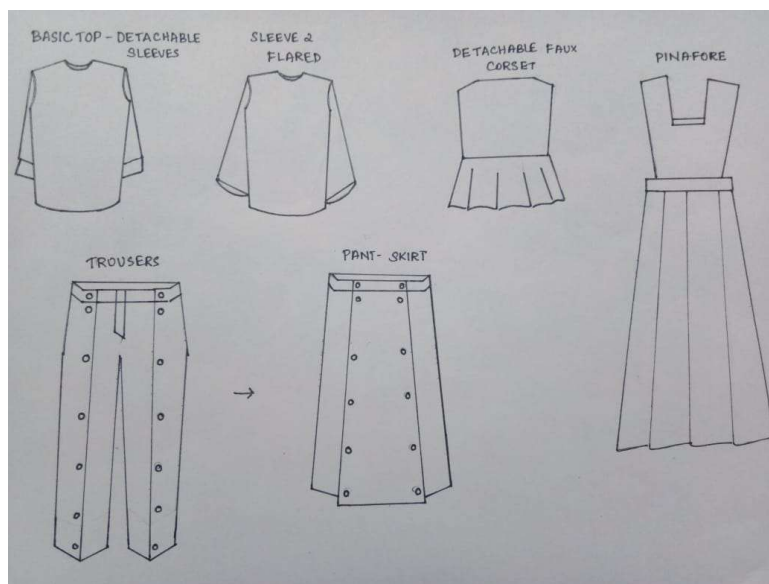


Fig. 8. SELECTED DESIGN

The design contains:

1. A basic sleeveless tunic top.
2. 2 sets of detachable sleeves.
 - Flaired sleeve for a casual look
 - Shirt sleeve for a formal look.
3. A pinafore dress for a formal look.
4. A detachable corset piece for a party wear look.
5. A pair of trousers for a formal look.
6. A detachable panel to convert the trouser into a faux skirt.

Fastening placements

- Factors to consider while placing fastenings:

- While construction of a convertible pant skirt, In this case, buttons were used. away from the centre of the leg, so that while the skirt panel is placed, there would be enough fabric that the wearer does not trip and fall.
- The velcro placements need to be carefully considered and intersected properly so that in the places like the armhole, the rough side does not come in contact with the skin giving discomfort to the wearer.

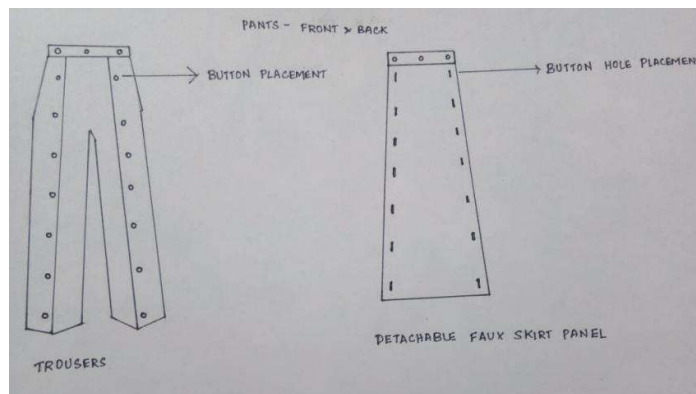


Fig 9 FASTENING PLACEMENT 1

When it comes to the sleeves, extra fabric was measured for about $\frac{3}{4}$ th of an inch on either side of the sleeve. The soft part in the velcro was placed in the wrong side at one side and the right side of the fabric on the other so that it forms the right shape when stuck together.

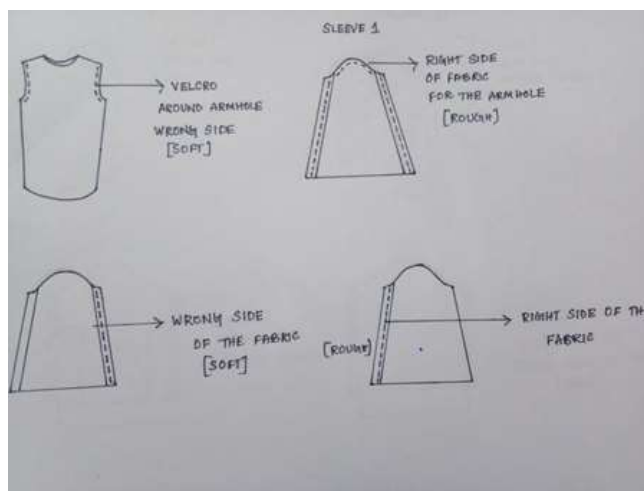


Fig 10. FASTENING PLACEMENT 2

For the second variation of sleeve, the velcro attachment at the sides of the sleeves were stopped right before the cuffs start. Darts were taken after the velcro was sewn in the fabric after which the cuffs were attached to give a smooth look.

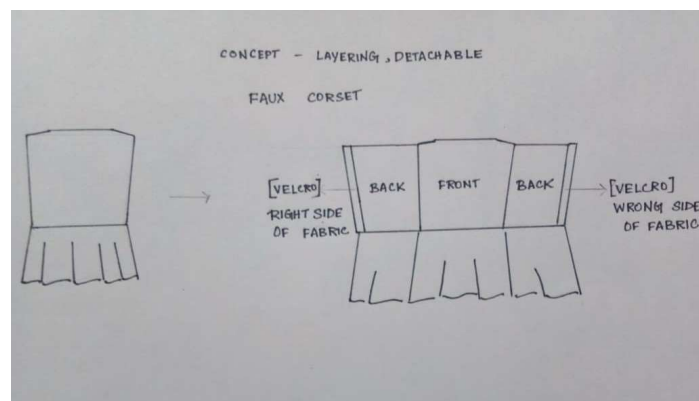


Fig 11. FASTENING PLACEMENTS 3

For the faux corset look, there was excess fabric left out at either than the measured seam allowance to accommodate the velcro of an inch. At one side the velcro bar was placed at the wrong side of the fabric and the other side the velcro bar was placed at the right side of the fabric.

Illustrations



Fig 12. Casual Look



Fig 13. Party Look



Fig 14. Party Look



Fig 15. Semi Formal Look



Fig 16. Casual Look



Fig 17. Formal Look

Result and discussions

Fastenings on the garment



Fig 18.FASTENINGS ON THE GARMENT

Final outcome



	
Party look	Party look
	
Formal look	Semi Formal look



FIG 19. FINAL OUTCOME

Focus group interview

A one to one interview was conducted to a focus group which include customers of ages between 18 and 21, who belong to urban upper and middle class families, students that are doing their under graduation programme, and young professionals. These professionals or students belong to families that might earn an income between the range of 30,000 to one lakh rupees. The questions asked to them were as follows.

The questions were focussed on finding consumer awareness about sustainability and it's concepts, difficulties encountered while styling clothes, why and when do they buy new clothes as introductory questions pertaining to likeness of the concept. The pictures of the product were shown and questions related to the likeability of the product, what the interviewees thought about the concept of using minimal clothing articles to mix and match and if they would invest on a product like this was asked.

Findings of the focus group interview

The images of the product were shown to the 8 interviewees who fit the parameters of the target customers and they were asked about their views about the product. The inferences from their responses were as follows.

When asked how they liked the product the response was positive.

- Most of the interviewees mentioned that they liked the outcome since it comes with a lot of options and was trendy.
- There were mentions about how advantageous it is to find correct matches for suitable occasions.

When asked about their opinions on changing looks with very minimal clothing articles

- most of the replies indicated that this was a very new and innovative concept that they had not heard before.
- They were clear that it is very convenient and helpful to find right match for the right occasion.
- some felt it would save money and time.
- Some said there would be less wastage of clothes.

When asked would the invest on a product like this

- Almost everyone responded they would invest on such a product, since it would be beneficial and feasible and useful in today's world.
- Some said the product was worthy and cost efficient.

Conclusion

The capsule collection of transformable clothing using the concept of detachable fashion was developed. The inspiration for this design was delicate space drip as referenced from the insight young of vision next. The fabrics chosen for this design were common to those spotted in the recent runways such as lace and suiting materials. The silhouette designs were picked from the brief trend analysis done. The fastenings used to implement detachable fashion were buttons and velcro. Ten different looks could be created under party wear, formal wear and casual wear.

References

1. Banim, M., & Guy, A. (2001). Discontinued selves, Why do women keep clothes they no longer wear? In A. Guy, E. Green, & M. Banim (Eds.), 'Through the wardrobe' Women's relationships with their clothes.
2. Cao, H., Chang, R., Kallal, J., Manalo, G., McCord, J., Shaw, J., & Starner, H. (2014). Adaptable apparel: A sustainable design solution for excess apparel consumption problem. *Journal of Fashion Marketing and Management*
3. Carrico, M., & Kim, V. (2014). Expanding zero-waste design practices: A discussion paper. *International Journal of Fashion Design, Technology and Education*.
4. Cho, E, Gupta, S, & Kim, Y.-K. (2015). Style consumption: Its drivers and role in sustainable apparel consumption. *International Journal of Consumer Studies*.
5. Chunmin Lang & Bingyue Wei 2018, Convert one outfit to more looks: factors influencing young female college consumers' intention to purchase transformable apparel.
6. Essi Karell, 2013 "Planned Continuity: Multi-life Garments through Modular Structures & Supplemental Services," in *Sustainable Fashion: New approaches*.
7. Farrer, J. (2011). Remediation: discussing fashion textiles sustainability. In A. Gwilt & T. Rissanen (Eds.), *Shaping sustainable fashion: Changing the way we make and use clothes* . UK: London, Earthscan.
8. Feitzinger, E, & Lee, H. L. (1997). Mass customization at Hewlett-Packard: The power of postponement.
9. Fletcher, K. (2008). *Sustainable fashion and textiles: Design journeys*. London, UK: Earthscan.
10. Griggs, D. Stafffford-Smith, M. Gaffffney, O. Rockström, J. Öhman, M.C. Shyamsundar, P. Noble, I. Policy: Sustainable development goals for people and planet.
11. H Cooh, (2012) *Design Functions in transformable apparel*.
12. Hawley, J. (2008). *Economic impact of textile and clothing recycling*.
13. Hetzel, P. (2007). Fashion as the ultimate experiential object: The case of Issey Miyake's A-POC brand. In A. Carù, & B. Cova (Eds.), *Consuming experience* (pp. 126–136). New York: NY: Routledge
14. Jahan, I. (2017). A study on waste management and minimization in ready made garments (rmg) industry. *American Scientific Research Journal for Engineering, Technology*

15. Janigo, K. A., & Wu, J. (2015). Collaborative redesign of used clothes as a sustainable fashion solution and potential business opportunity. *Fashion Practice: The Journal of Design, Creative Process & the Fashion Industry*
16. Jess Peter, (2018), Transformable clothing: the biggest challenge of sustainability.
17. Kirsi Niinimäki, and Lotta Hassi. "Emerging design strategies in sustainable production and consumption of textiles and clothing." *Journal of cleaner production*.
18. Lewis, V. D. (2008). *Developing strategies for a typology of sustainable fashion design*..
19. Mazi Hatef, Siti Shukhaila Shaharuddin (2020), A strategy for eco-fashion design based on the clothing life cycle.
20. McQuillan, H.A. Gwilt & T. Rissanen (2011) Zero- waste design practice: Strategies and risk taking for garment design.
21. McQuillan, H. (2011). Zero-waste design practice: Strategies and risk taking for garment design. In A. Gwilt & T. Rissanen (Eds.), *Shaping sustainable fashion, Changing the way we make and use clothes*. London: Earthscan.
22. Minjie Gong, 2012 , Sustainable fashion design: transformable garments for versatility and longevity.
23. Osmund Rahman, Minjie Gong 2016, Sustainable practices and transformable fashion design.
24. Patrizia Gazzola, Enrica Pavione, Roberta Pezzetti and Daniele Grechi, 2020, Trends in the Fashion Industry, The Perception of Sustainability and Circular Economy.