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## COMPARATIVE STUDY ON SUSTAINABLE FABRIC UPCYCLING BY GARMENT INDUSTRY

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### ABSTRACT

Textile and fashion products are manufactured, distributed, sold and used worldwide, so the textile and fashion industry have a major impact on the environment. Environmental issues are playing an increasingly important role.

Sustainability is a systemic concept, relating to the continuity of economic, social, institutional and environmental aspects of human society.

Upcycling is essentially the “Reuse” in “Reduce, Reuse, Recycle.”The textile and fashion industries consume huge quantities of resources, such as water and energy, use toxic chemicals, rely heavily on transportation which uses additional resources, produces a large amount of waste, and are implicated in human rights violations in developing countries. Upcycling is designed to work in opposition to consumer culture, encouraging people to think of new and innovative ways to use things, instead of simply buying new consumer goods. In this project we have tried to find out the way for Upcycling of wastages from the apparel industry.

**Keywords:**Sustainability, Eco fashion, Upcycling,Garment wasteTesting Reports, Demographic & Psychographic survey.

### INTRODUCTION

#### General

Recycling and reuse of textile wastes has assumed importance in the recent past in our country. With the rise in the living standards, the demand for textiles and clothing is expected to grow. Like any other industry this industry also generates all categories of industrial wastes namely liquids, solids and gases. Various useful materials can be recovered from these wastes by utilization of new processes. The wastage of raw materials can be reduced by improving manufacturing process at each stage, thereby savings in the major inputs. During the process certain kind of wastes such as solid wastes can be recovered by adopting new technologies, whereby these wastes can be converted into useful materials for other applications.

The way we are producing clothes today is environmentally damaging. The textile and fashion industries consume huge quantities of resources, such as water and energy, use toxic chemicals, rely heavily on transportation which uses additional resources, produces a large amount of waste, and are implicated in human rights

violations in developing countries. so we can go for upcycling - It is the process of converting waste material or useless products into new material or product. It reduces waste & resources consumption by creating a product with higher value from waste.

## Classification

Garment Industrial waste suitable for upcycled garments and accessories can be divided into three groups.

- Production waste
- Pre-consumer waste
- Post-consumer waste

## Objectives

- The primary aims of this paper are two-fold: to consider how to bring garment waste back to the production cycle in apparel design.
- Economical use of wastages through industrial production methods for mass production.
- To manufacture the upcycled products with strong aesthetics..
- To develop the ecofriendly products for green contribution.

## Scope

- We can develop in-house Waste management technique in garment industry.

- Sustainable and eco clothing will become more popular within fashion markets.
- To create products in more eco friendly ways to meet the demands of the environmentally conscious consumer.

## Limitations

The limitations encountered during the study carried out were:-

1. Non- availability of different options of technologies, though large number of literature study and interaction with people from textile industry revealed only what is given in the study.
2. However, all departments, pertaining to textile processing, right from spinning to the recovery and reuse of various solid textile wastes, after they have been worn by the people and then discarded, have been discussed. The study highlights the scope of recovery in the textile industry and textiles as such. The recovered waste have tremendous end use, either in the process of manufacturing of primary products or secondary products or the products which have no relevance to the textile industry at all.

## Raw Material

Textile waste suitable for fashion design can be divided into three groups .

### 1. Post-Consumer Waste,

Post-consumer textile waste is created at the end of a garment's first use. This mostly includes used garments and domestic textiles. In common with many other countries, Estonia currently lacks a large-scale system for collecting and

reusing this type of waste. Such a system would enable the sorting and separation of products and materials fit to be reused. Within such a system the majority of used clothing is discarded alongside other consumer waste and ends up in landfills. Even in England, where a fairly functional system of collecting reusable clothing is in place, 1.2 million tons of the total 2 million tons of discarded clothing ends up in landfills each year. In less developed countries like Mexico and Poland, 98% of textile waste is sent to landfills (OECD 2009).

## 2. Pre-Consumer Waste

With the domination of fast fashion and the accompanying overproduction of clothing, a new type of waste has emerged: sales leftovers. This includes leftovers from stores and company product development, defective returned goods, and outsourced garment shipments that are not redeemed from customs for various reasons. Pirate product seized by customs which would normally be destroyed also forms a part of pre-consumer waste.

## 3. Production Waste

Production waste that comes from the garment industry itself is a prospective input for Upcycling – meeting the need both in terms of quantity and quality. It consists of leftovers from garment manufacturing, such as trimmings, proofs, leftover fabric, off-cuts, ends of rolls, etc.

## Upcycling with Fashion

Recycling and upcycling is a rich and growing source of innovative design in the fashion and accessories industries. In a fast-fashion world of throw-away clothing, it is the ultimate expression of the slow-fashion movement, with

each piece individually conceived and crafted from scratch, using different materials each time. ReFashioned features 46 international designers who work with recycled materials and discarded garments, reinvigorating them with new life and value. The result is beautiful and desirable clothing and accessories that also make an important statement to the fashion world about its wasteful and exploitative practices

Reflections on Practice” expressed that the result is a proliferation of design ideas, styles and imagery that has an equivalent in physical waste. ... trends, the actual art effects – garments, trims, fabric off cuts, samples– become physical detritus of which only a portion goes on to a useful second life. Solutions to manage this tangible waste, such as resale and reuse, closed loop recycling and upcycling, all move the system.

## Recycling v/s Upcycling

We all know what the basis of Recycling is: a practice that takes an item and targets it for reuse, returning it back to the cycle of daily contribution to society rather than discarding it to trash. Going to the dictionary for confirmation renders the following:

- To treat or process (used or waste materials) so as to make suitable for reuse: recycling paper to save trees
- To alter or adapt for new use without changing the essential form or nature of: The old factory is being recycled as a theater
- To use again in the original form or with minimal alteration: The governor recycled some speeches from his early day Upcycling represents a truly

cyclical, balanced process that all industries and companies should be aiming towards. At this point, just having the aim would be another important step. All of our products could be drastically changed if the beginning of their design started with the goal of not having them end up in a landfill.

## CONCLUSION

We can conclude from our results and discussions;

1. There are possible ways of cost reduction for all the products by following industrial production methods. This will definitely increase the sales of the products.
2. The strong aesthetics can increase the purchasability even after highly priced.
3. Cost effectiveness also increases the sales with lesser aesthetics.
4. Because of the objective of the project this can be customized to the mass production which can reduce logistics and handling.
5. There is wide scope for industrial engineers to set up in-house special skill centers for mass production of the sale.

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