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Upcycling of Leather Waste to Create Upcycled Products and Accessories

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Abstract

Over the past two decades, the demand for production is increasing very rapidly in all aspects of the required living commodities. In order to meet all the required demands, over production and utilization of all resources is not enough. Recently, awareness of environmental issues and creative ideas of recycling wasted materials have attracted attention. In the midst of the widespread movement of 3R (Reduce, Reuse, Recycle), the concept of upcycling is rapidly gaining importance worldwide. Upcycling is one such method which not only deducts the amount of waste that gets tossed but it also stops the demand for more production of items that will potentially meet the same landfill fate. In the textiles and apparel sector, waste generated from the industries has become a significant problem in terms of growing waste management costs and its image.

Leather industry has been characterized as one of the highly polluting industries and also generates large amount of leather wastes that can have adverse impact on the environment. Various useful materials can be recreated from these wastes by innovative designing and processing. Thus, in the following research, 30 designs of high value-added upcycled Fashion and Home Accessories were developed from leather scrap waste generated from the manufacturing and sewing process of leather products. The designs resulting from the following study were evaluated for their acceptability amongst the consumers.

Keywords: upcycling, leather waste, fashion and home accessories, designing, value addition

1. Introduction

Today, in the world of modern technologies, high demands and consumptions, a large amount of waste is disposed of in landfills each year. This causes economic and environmental problems to the society, in addition also represents a severe depletion and waste of resources. Although, the environmental awareness of the populace has increased significantly in recent years, there is a need to explore some innovative sources which are more sustainable and environment friendly in order to meet the required demands. In this scenario, utilization of waste generated from production and consumption of products appears to be the emerging choice (Runell, 2011) [6].

Textile and Apparel industry is among the most essential consumer goods industry. However, textile industry is also accused of being one of the most polluting industries. Not only production but consumption of textiles and apparels also produces waste. To counter the problem, the industry has taken many measures for reducing its negative contribution towards environment. One of such measures is textile and apparel recycling and reusing. But this has not been able to sufficiently reduce the environmental impact of the fashion and textiles industry more widely (Agrawal and Sharan 2015) [5]. Several companies are trying to create their products in more eco- friendly ways to meet the demands of the environmentally conscious consumer. So, if one can add value – economic, intellectual, emotional, material – to a product through the process of reuse, it can be called ‘upcycled’ (Modi, 2013) [4].

Murray (2002) states that design for upcycling is about ‘not merely conserving the resources that went into the production of particular materials, but adding to the value embodied in them by the application of knowledge in the course of their recirculation.’ In contrast to reusing or recycling, upcycling uses existing materials to improve upon the original ones. The process requires a considerable amount of creativity and vision, as well as a foundation of thriftiness and environmental consciousness. The end result is typically a product or item that is one-of-a-kind, handmade, and sustainable and cost effective. Upcycling is the process of creating

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Something new from the old products, waste materials, and unwanted product and materials of better quality and for better environmental value. Commonly-used term, 'recycling', is the process of 'downcycling'(reducing the value) wastes into a reusable product while on the other hand, 'upcycling', a particular form of recycling, involves turning waste material or an unwanted product into a better-quality product (Kim, Hyun Joo, 2014) [2]. The present research paper attempts to apply the concept of upcycling to leather waste generated from the leather manufacturing industries. The primary aim was to assess the type, quality and size of leather scrap collected and to incorporate different upcycling approaches and techniques to develop value added upcycled fashion and home accessories. Leather is a unique and highly versatile material. It is a renewable resource based on a by-product of the meat, wool and dairy industries and used in a wide range of products as diverse as garments, footwear, luggage, bags and portfolios, ladies handbags, belts and several industrial accessories. The cutting and sewing is done according to the pattern/design/size of the product manufactured. This generates small cuttings, side layers from the leather sheets which are abandoned are considered as waste. This generated leather waste disposed into the landfills, which takes long time to decompose and creates environmental pollution. To reduce the elimination of waste and using all the resources appropriately process of upcycling is very necessary (Zlin, Czech Republic, 2000) [8].

Methodology

The present section presents the Methodology adopted for the present study. It has been divided into two phases-

1. Experimental phase
2. Evaluation phase

2.1 Experimental Phase

In this phase, a survey was conducted to collect the data from various leather shoes and goods manufacturing industries of Agra. The information was collected regarding the demographics of the leather industries and estimation of the leather waste generated by them. The next part of the phase involved creating innovative upcycled products using leather waste. The upcycled leather products and accessories crafted were divided into two categories-

2.1.1 Home accessories: Products developed

1. Cushion covers
2. Table mats
3. Holder and Folders

2.1.2 Fashion accessories: Products developed

1. Handbags and Wallets
2. Yokes and Collars
3. Earrings and Necklaces

2.2 Evaluation Phase

In this phase, a self-made questionnaire was formulated for evaluating the acceptability of the consumers towards upcycled products created from leather waste. The questions were based on the following items-

- Assessment of the created leather products from leather waste
- Ranking them as per interests with the help of consumers
- Determine the acceptability of consumers towards upcycled products form leather waste

Since, the evaluation involved basic knowledge of design and aesthetics, 50 students having background in clothing and

textiles were selected as respondents.

3. Results and Discussions

On the basis of survey conducted on 10 different leather manufacturing units, predominantly most of the industries were not aware about the term upcycling, but had views regarding creating the new products from waste: like child shoes, wallets, key rings, belts etc. Besides this, the leather goods manufacturing industries try to reduce the waste by employing skilled manpower and using latest machineries, new techniques and CAD/CAM software to create leather goods with minimum wastage. The waste generated was in the form of cuttings, small pieces, stripes etc. at the rate of 20 kg /day. These scraps were collected from these industries to develop new upcycled products.

In the present study, total six product categories were developed with five different designs each. In total 30 different upcycled products were designed. These designs and patterns were created using techniques of interlacing, pasting, stitching of leather scraps. The products developed are presented in the following figures 1 – 6.

3.1.1 Group A: Home Accessories-Product 1-Cushion Covers



Fig 1: Cushion Covers

3.1.2 Group A: Home Accessories - Product 2- Table Mats



Fig 2: Table Mats

3.1.3 Group A: Home Accessories - Product 3- Holders & Folders



Fig 3: Holders & Folders

3.2.1 Group B: Fashion Accessories - Product 1- Bags & Wallets

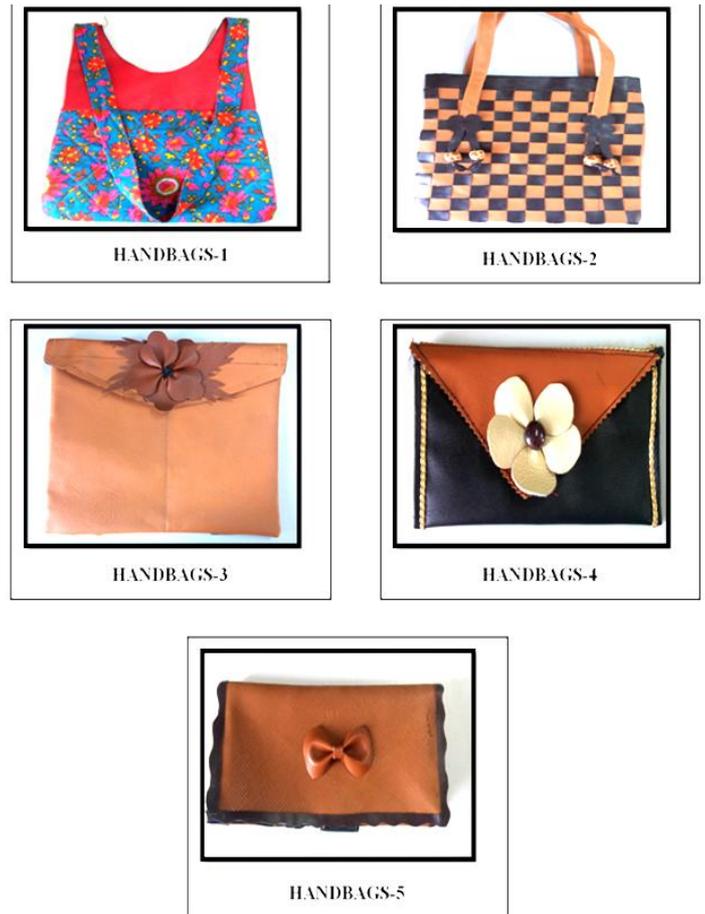


Fig 4: Bags & Wallets

3.2.2 Group B: Fashion Accessories - Product 2 -Yokes and Collars (Fig: 5)



Fig 5: Yokes and Collars

3.2.3 Group B: Fashion Accessories - Product 3- Necklace & Earrings (Fig: 6)



Fig 6: Necklace & Earrings

Finally, these 30 upcycled products created were evaluated for their assessment and acceptability amongst the consumers. The results obtained on different items of questionnaire are shown in tables 1-7, below -

Table 1: Awareness regarding upcycling amongst the respondents

Item	n=50 (Data in () indicates percentage)	
	Yes	No
Awareness of Upcycling	16(32)	34(68)

Only 32% of the respondents were aware of the concept upcycling whereas 68% respondents were unaware of the term.

Table 2: Technique of managing the waste collected at home (Reuse, recycle or upcycle)

Item	n=50 (Data in () indicates percentage).			
	Reuse	Recycle	Upcycle	Neither
Reuse, recycle and upcycle the waste collected	23(46)	16(32)	4(8)	7(14)

About 46% respondents reused the waste collected at home, 32% respondents recycled their household waste, 8% respondents did upcycling, whereas 14% respondents' didnot use any techniques to manage their waste.

Table 3: Ranking of upcycled products

Item	n=50				
	RANK-1	RANK-2	RANK-3	RANK-4	RANK-5
Cushion covers					
Table mats					



The above table shows the ranking of the upcycled products crafted. The ranking was done by the respondents as per their liking and acceptance on the scale of 1-5.

Table 4: Consent to pay a little higher amount to buy the upcycled products

Item	n=50 (Data in () indicates percentage)	
	Yes	No
Consent to pay a little higher amount to buy the upcycled products	46(92)	4(8)

Maximum respondents (92%) agreed to pay a little higher amount to buy the upcycled products for the sake of the environment.

Table 5: Preferences by the respondents on the different parameters of upcycled products

Item	n=50 (Data in () indicates percentage)						
	Criteria	1	2	3	4	5	6
Preferences by the respondents on the different parameters of upcycled products	Second user	9(18)	24(48)	5(10)	2(4)	5(10)	5(10)
	Creative and innovative	6(12)	3(9)	3(9)	10(20)	2(4)	26(52)
	Handling process	4(8)	13(26)	18(36)	8(16)	5(10)	2(4)
	Sustainability(good for environment)	7(14)	7(14)	8(16)	13(26)	11(22)	4(8)
	Durability	2(4)	6(12)	10(20)	11(22)	16(32)	5(10)
	Price	12(24)	6(12)	7(14)	9(18)	8(16)	8(16)

Most of the respondents associated creativity and innovation with the upcycled products whereas minimum number of respondents had price of the product in mind while using the upcycled products.

Table 6: Willingness to buy creative upcycled home and fashion accessories amongst respondents

Item	n=50 (Data in () indicates percentage)		
	Always	Sometimes	Never
Willingness to buy creative upcycled fashion accessories	8(16)	41(82)	1(2)

82% respondents were sometimes willing to buy creative upcycled fashion accessories, 16% respondents were always willing to buy whereas 2% respondents were never willing to buy creative upcycled fashion accessories. Comparable results were also found in study conducted by Seo and Kim (2012) [7]. on creation in sustainable green upcycled products, in which most of the people were willing to try and purchase the eco-fashion. The result hereby obtained shows

the awareness of environmental insights and the possibility of creation of products from different waste materials.

Table 7: Upcycling help to reduce the waste and save our environment

Item	n=50 (Data in () indicates percentage)		
	Agree	Neutral	Disagree
Upcycling help to reduce the waste and save our environment	39(78)	7(14)	4(8)

About 78% respondents agreed that the concept of upcycling if introduced effectively would help to reduce the waste and save our environment whereas 8% respondents' didnot agree that upcycling would help to reduce the waste generated at industrial level and at domestic level to save our environment from pollution, soil irrigation and disposable of waste into water bodies.

Further, the upcycled products designed and crafted were preferred amongst the respondents for its Creativity and innovation, colour combination, design and

style used. This upcycling project was also appreciated as it helped in reducing the waste effectively and thus promoting sustainable environment. Kim, Hyun Joo (2014) ^[2] in their study on designing of high value-added upcycled handbag designs for the Dubai Luxury Fashion Market also states that the concept of upcycling has been placed as a strong cultural, political, economic, and cultural factor of influence in conveying environmental messages. Thus, this study along with the present research work focuses on overcoming the limits of existing recycled designs with the concept of 'upcycling' and creating high values through the establishment in worldwide.

4. Conclusion

Upcycling is a better option compared to recycling of leather waste. Usually leather waste generated from production is not given any attention and result in landfills. The implication of this project was to creatively evolve different techniques to consume the leather waste. New products were developed from the leather scarps which were appreciated for their innovative design and styles.

Up cycling is the need of the hour, so that it can benefit the organizations and industries to become more green and sustainable and sequentially also making the environment less polluting and hazardous. The use of leather waste as raw material for making products or accessories can attract a real interest from private entrepreneurs, artists, designers, hand makers or folk. It can create a market of handmade upcycled products made out of leather waste and could be sold at a premium price. This concept if readily adopted could benefit hundreds of artisans with a steady income.

5 References

1. Dinesh Bhatia, Ankush Sharma, Urvashi Malhotra. Recycled fibers: An overview, *International Journal of Fiber and Textile Research*. 2014; 4(4):77-82.
2. Kim, Hyun Joo. A Study of High Value-Added Upcycled Handbag Designs for the Dubai, *Journal of the Korean Society of Fashion Design*. 2014; 14(1):173-188.
3. Man, leungyee. creation of sustainability in fashion accessories, Hong Kong, 2011.
4. Modi Darshita. Upcycling fabric waste in Design Studio a thesis submitted to NIFT in partial fulfillment of the requirement of the degree of Masters of design, retrieved from [2013; 14\(13\):111-26/jspui/.../Upcycling%20fabric%20waste%20in%20Design%20Studio.p... 12th December, 2015.](#)
5. Rinku Agrawal, Madhu Sharan. Municipal Textile Waste and Its Management, *Research Journal of Family, Community and Consumer Sciences*. 2015 3(1):4-9.
6. Runnel Tõnu. Trash to trend, Aus doctoral thesis by –issuu, retrieved from, 2011, <https://issuu.com/runnel/docs/reet-aus> on 5th December, 2015.
7. Seo Y, Kim W. A study on trend of green design and direction of its development for future –case study: up-cycling design-. *Proceeding of Korean Society of Design Research*, 2012, 60-61.
8. Zlin. Waste generated in the leather products industry, 14th session of the leather and leather product industry panel, united nation industrial development organization (UNIDO), 2000.