

Antecedents of Consumer Behaviour towards Upcycling Clothing: An Indian Perspective

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ABSTRACT

The global apparel sector, with its significant environmental footprint- producing over 92 million tons of textile waste annually- has driven the rise of sustainable practices such as recycling, reuse, upcycling and responsible waste disposal. Upcycling particularly, involves transforming waste materials into new, high-value products and is seen as a promising solution to reduce textile waste and ecological harm. As per various studies, upcycling has huge potential for transforming waste to useful products with significant value addition unlike other methods of tackling apparel waste. In this context, this study focuses on consumer awareness, behavior, and barriers towards upcycled clothing in India, a market rich with traditional textile repurposing culture but challenged by issues such as perceived product quality and cost. A quantitative research methodology was employed using a structured questionnaire distributed online, yielding 65 responses representative of diverse demographics. Principal component analysis extracted eight key factors explaining 70.53% of variance, reflecting dimensions of consumer behavior such as occasion and type of upcycled clothing, sustainability knowledge, environmental impact awareness, circular economy understanding, willingness to pay premium prices, and aesthetic preferences. Results of the study indicate a majority of respondents are aware of sustainability and upcycling, with preference toward everyday clothing and accessories over formal or specialty items. Consumers knowledgeable about sustainability exhibit greater interest in artistic, handcrafted designs, while those understanding circular economy principles show willingness to pay moderately higher prices for upcycled clothes. Uniqueness, minimalistic design, and vintage appeal emerged as significant design expectations. However, concerns over pricing justify mixed attitudes toward premium costs.

Keywords: Upcycled Clothing, Consumer Behaviour, Sustainable Fashion, Circular Economy, Environmental Awareness.

INTRODUCTION

The apparel industry is a combination of the design, manufacturing, distribution and retail of clothing and garments. It is a major contributor to the global economy employing over 75 million people, especially in developing countries and playing a very critical role in the daily lives of people being one of our necessities. The global apparel industry, valued at over \$1.5 trillion, is one of the most resource intensive and polluting sectors, generating approximately 92 million tons of textile waste annually. Driven by fast fashion and ever-changing trends, the companies often compromise on environmental sustainability. Sustainability refers to meeting the present needs while not limiting the resources such that the future generation are not able to meet their needs. In the apparel sector, sustainable practices include, reducing waste, minimizing pollution, and ensuring fair labor practice and rightful disposal of textile waste which offers an innovative and sustainable approach to transforming discarded textiles into new, higher-value products.

Today, the apparel industry stands at a critical juncture where environmental sustainability and consumer consciousness converge. As the global fashion sector grapples with its environmental footprint, upcycling has emerged as a transformative practice that resonates with eco-conscious consumers. The ecological impact of textile waste is substantially increasing with large amounts of water being utilized, microplastic pollution from synthetic fibers, waste cuttings, etc. However, the industry holds a lot of potential to reverse these effects using innovation in materials, circular production models and ethical sourcing. Growing consumer awareness has prompted a shift towards mindful fashion. However, perceptions about textile waste and products still remain fragmented in terms of consumer opinion and behaviour. It therefore requires focus towards SDG 12: Responsible Consumption and Production which is extremely relevant for fast fashion and textile waste.

One promising solution that has been gaining attention within sustainable fashion over the years is upcycling which offers a creative and impactful approach to address the growing issue of textile waste in the society.

Upcycling is the process of converting waste materials into new materials or products of higher value or quality. Consumer motivation towards upcycled fashion is primarily anchored in environmental concern, thus creating a market for sustainable apparel. Research reveals that environmental concern significantly influences consumer attitudes towards upcycled fashion products and accessories. Upcycling reduces the environment footprint to a huge extent as the textile waste gets repurposed. The cost of upcycling sometimes is less economical for the consumers. The time required in management, collection, equipment, assembly and creation along with the craftsmanship and design add additional cost which might result in a product being at par or more than the market price of the product. However, Upcycling is an extremely effective way to reduce the extent of the foreshadowing environmental challenge wherein the product life cycles are extended

Fast Fashion (Key challenge to Sustainability): Fast fashion particularly has had a big impact on how we perceive, wear, create, buy and dispose-of clothes within a matter of seconds both as individuals and businesses. These textile products are being made from cheaper materials, thus compromising on the durability and quality leading to the waste disposal in the form of landfills and incineration. The environmental impact of these throwaway fabrics has been detrimental to the extent that according to the UN Environment Programme the industry is the second-biggest consumer of water and is responsible for about 10% of global carbon emissions. Fashion waste includes all discarded clothing, accessories, textiles from the production, consumption and the manufacturing processes of all fashion products.

The industry exploits the water sources and pollutes rivers and lakes. According to business- waste.com (a leading waste management broker from the UK), we produce 92 million tonnes of waste every year, across the world, though new improvements in technology and innovations are constantly coming up to reduce the textile waste. This is where upcycling and recycling come under adoption of the circular business model. By extending a product's life cycle through upcycling or recycling, we conserve resources and decrease pollution, thereby reducing the environmental impact of the apparel industry. Not only that, we transform products creatively into higher functionality to be able to suit various consumer needs.

Consumers who are better aware of sustainable practices and have a positive outlook towards sustainability are more inclined towards making sustainable purchasing decisions. Considering that the interrelatedness of both consumers and businesses is constantly increasing, it is important to identify the key factors influencing consumer behavior towards sustainable fashion and the barriers to adopting upcycling. Despite the increasing emphasis on sustainable fashion, sustainable products come with extra cost constraints which makes them less competitive against fast fashion. Consumers also often perceive upcycled products as inferior in durability and in comfort, so that is also a barrier preventing adoption of upcycled clothing. Through this study, we aim to identify the key challenges in meeting sustainability within the apparel industry and consumer attitude and challenges of upcycling.

This research study primarily aims to explore how consumer behaviour changes with the appeal and functionality of upcycled clothing. It investigates the level of awareness that consumers have regarding the ongoing environmental crisis and the deleterious effects of fabric waste disposal on the environment. Additionally, it also examines the key drivers influencing sustainable purchasing decisions and the factors that contribute to consumers' hesitation towards upcycled products. By addressing these aspects, this study seeks to provide insights into consumer preferences and propose strategies that could make sustainable fashion more appealing and accessible.

LITERATURE REVIEW

Upcycling represents a circular economy practice that transforms discarded textiles and garments into new products of higher value and quality (Popa & Curteza, 2024). The concept has gained significant academic attention, with research publications on fashion upcycling experiencing exponential growth from 2014 onwards, particularly during 2018-2022 when approximately 59 studies were published (Popa & Curteza, 2024). The global upcycled fashion market demonstrates substantial growth potential, projected to reach USD 20.65 billion by 2034, indicating increasing commercial viability and consumer acceptance (Market Research, 2025).

Singh et al. (2019) identifies upcycling as a critical component of sustainable fashion, ranging from process-oriented studies exploring optimal fiber transformation to consumer-focused behavioral research. The multidisciplinary nature of upcycling research encompasses environmental science, design, business, and sustainability studies, reflecting its complexity and broad applicability (Popa & Curteza, 2024).

The theoretical foundations of upcycling research have evolved significantly over the past decade. Peña-Vinces et al. (2022) established the Stimulus-Organism-Response (S-O-R) framework as a primary theoretical foundation for understanding consumer behavior in sustainable fashion.

Lima et al. (2024) expanded this theoretical understanding through bibliometric analysis of 759 publications spanning from 1992 to 2024, demonstrating an exponential increase in papers published on consumer behavior in sustainable fashion from 2012 to 2024.

The literature also reveals a rising consumer awareness of the fashion industry's environmental impacts, including greenhouse gas emissions, water pollution, and textile waste generation (Guria & Roopa, 2025). Consumers progressively view upcycled fashion as a means to express environmental values and social responsibility, particularly among younger demographics (Li et al., 2024). This environmental consciousness extends beyond individual benefits to encompass broader sustainability goals and circular economy principles.

Uniqueness value emerges as one of the compelling consumer motivators, with high correlation studies predicting consumer attitudes towards upcycled fashion (Agarwal, 2025). Consumers are also attracted to the distinctive, one-of-a-kind nature of upcycled products that differentiate them from mainstream fashion offerings. Shatarah (2024) found that innovative upcycling practices can demonstrate up to 70% reduction in material waste while enhancing brand loyalty and customer satisfaction through unique design elements.

India emerges as a significant contributor to global research on consumer behavior towards upcycling in the apparel industry, with 26 academic papers documented in recent bibliometric analyses (Popa & Curteza, 2024). Indian studies highlight how upcycling practices align with historical Indian traditions of repurposing materials, such as transforming old saris into quilts or rugs. This cultural resonance provides a unique advantage for sustainable fashion adoption in India, where traditional craftsmanship and textile recycling techniques have long existed (Barua, 2007).

Research conducted across Indian metropolitan areas reveals significant consumer awareness gaps regarding upcycled fashion. Bairagi and Goswami (2022) found that 75.5% of college students had not purchased upcycled, recycled, or pre-owned clothing, with 62.8% unaware of Indian brands selling such products.

However, studies consistently show positive attitudes when consumers understand upcycling concepts, particularly regarding environmental benefits and product uniqueness (Consumer Study, 2023). Agarwal (2025) demonstrates strong correlations between recycling habits and purchase intentions for sustainable clothing among Indian consumers, with females exhibiting higher recycling behaviors and sustainable purchasing tendencies.

Indian research also identifies specific barriers unique to the domestic market context. Quality perception emerges as the primary obstacle, with consumers associating upcycled products with inferior durability (Textile Research, 2022). Hygiene and contamination concern particularly affect acceptance of post-consumer waste products, reflecting anxiety about previous ownership and material conditions (Fashion Study, 2022).

RESEARCH METHODOLOGY

A quantitative research design was adopted and a structured questionnaire was developed using MS Forms to collect data to examine the consumer behaviour towards upcycling clothing among Indian consumers. The questionnaire contained various statements that were designed to assess various constructs of the study, including consumers' behaviours towards - occasion & type of upcycled clothing/ accessories, knowledge of sustainability and circular economy, and willingness to pay for upcycled clothing.

The survey was conducted via online channels such as email and WhatsApp groups to increase outreach and attract a diverse sample and representative of the whole. The respondents were encouraged to share the survey with their family and friends to increase the number of responses in different age groups and improve the generalizability of the findings.

The data collection was conducted within a short time frame but providing participants with an ample opportunity to complete the survey. By the end of the collection period, a total of 65 responses were gathered.

The data was then tabulated and analysed using MS Excel and SPSS to observe trends, patterns and consumer behaviour towards upcycling clothing.

ANALYSIS AND DISCUSSION

Descriptive Statistics:

Age Group	Frequency	Percentage (%)
Below 18	37	46
18-25	10	12
26-35	3	4
36-50	30	37
Above 50	1	1
Gender	Frequency	Percentage (%)
Female	33	41
Male	48	59
Profession	Frequency	Percentage (%)
Student	44	54
Entrepreneur	17	21
Homemaker	11	14
Corporate Professional	6	7
Freelancer	2	2
Education Consultant	1	1
Businessman	1	1
Income Range	Frequency	Percentage (%)
Below ₹5L	22	42
₹5-10L	6	11
₹10-20L	11	21
₹20L+	9	17
Others	5	9

The survey on consumer behavior towards upcycled clothing has diversified respondents' demographics which was essential for understanding consumer behaviour towards upcycled clothing. The study primarily considered young respondents, with 46% below 18 years and a substantial 37% aged 36-50, indicating strong interest in both youth and middle-aged groups. Other age brackets comprise smaller portions, reflecting lesser engagement.

Gender distribution shows a male majority at 59%, while females represent about 41%. Professionally, over half the respondents (54%) are students, highlighting the significance of younger, possibly more eco-conscious consumers. Entrepreneurs account for 21%, homemakers 14%, and corporate professionals 7%, with small fractions of freelancers, education consultants, and businessmen, showing participation from varied occupational backgrounds. Income breakdown indicates 42% earn below ₹5 lakh, coinciding with the high student representation. The next largest groups include ₹10-20 lakh earners (21%) and ₹20 lakh plus (17%), revealing meaningful involvement from mid to higher income consumers. ₹5-10 lakh earners comprise 11%, and other income categories make up the remaining 9%.

Factor Analysis:

In order to analyse the Indian consumers' behaviour and preference towards upcycled clothing, factor analysis was employed with an intention to help the researcher to identify, organise and evaluate various behavioral antecedents. Factor analysis methods helped the researcher in answering major research questions:

RQ-1: What are the key attitudes and behaviors of Indian consumers towards upcycled clothing?

RQ-2: What factors influence consumers' willingness to adopt and pay a premium for upcycled fashion products?

RQ-3: What are the perceived barriers and challenges that prevent wider acceptance of upcycled clothing among Indian consumers?

RQ-4: How do demographic variables such as age, gender, profession, and income affect consumer behavior and preferences for upcycled apparel?

Kaiser-Meyer-Olkin (KMO) Test

Before conducting the factor analysis, Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and the Bartlett's Test of Sphericity were conducted to check the data suitability for confirmatory factor analysis. According to Kaiser (1970) "a bare minimum of 0.5 and that values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb" (Hutcheson & Sofroniou, 1999). For results of KMO and Bartlett's Test see Table 1.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.627
Bartlett's Test of Sphericity	Approx. Chi-Square	467.888
	df	210
	Sig.	.000

Table-1

The value of **.627** for Kaiser-Meyer-Olkin Measure of Sampling Adequacy suggests that the sample is acceptable to be run in confirmatory factor analysis. The value falls under the mediocre category of analysis according to Hutcheson & Sofroniou (1999). Bartlett's Test of Sphericity also indicates the model to be significant ($p < 0.05$).

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.985	23.740	23.740	4.985	23.740	23.740	4.295	20.453	20.453
2	1.960	9.331	33.071	1.960	9.331	33.071	1.784	8.494	28.947
3	1.645	7.832	40.904	1.645	7.832	40.904	1.756	8.363	37.310
4	1.588	7.563	48.467	1.588	7.563	48.467	1.518	7.229	44.539
5	1.339	6.378	54.844	1.339	6.378	54.844	1.491	7.100	51.639
6	1.182	5.629	60.473	1.182	5.629	60.473	1.461	6.956	58.595
7	1.099	5.232	65.705	1.099	5.232	65.705	1.323	6.299	64.894
8	1.013	4.824	70.529	1.013	4.824	70.529	1.183	5.635	70.529
9	.958	4.560	75.089						
10	.884	4.210	79.299						
11	.778	3.704	83.003						
12	.629	2.993	85.996						
13	.555	2.641	88.637						
14	.465	2.213	90.850						
15	.439	2.092	92.942						
16	.379	1.804	94.745						
17	.341	1.626	96.371						
18	.252	1.200	97.571						
19	.216	1.026	98.597						
20	.148	.703	99.300						
21	.147	.700	100.000						
Extraction Method: Principal Component Analysis.									

Table-2

Overall, the cumulative percentage of explained variables in this case is sufficient to draw the conclusion on data reduction and it can be inferred that construction of 8 factors out of 21 variables sufficiently explain the relationship construct between independent variables and dependent variables.

Factor Loading as per Rotated Component Matrix

Rotated Component Matrix ^a								
	Component							
	1	2	3	4	5	6	7	8
VAR00001			.825					
VAR00002				.698				
VAR00003		.750						
VAR00004			.522					
VAR00005					.671			
VAR00006	.835							
VAR00007	.679							
VAR00008	.729							
VAR00009	.669							
VAR00010	.684							
VAR00011	.785							
VAR00012	.817							
VAR00013					.687			
VAR00014			.612					
VAR00015						.733		
VAR00016								.888
VAR00017		.782						
VAR00018						.793		
VAR00019				.792				
VAR00020		.463			.404			
VAR00021							.806	

The results of rotated component matrix helped the researcher to find majorly 8 factors for all 21 variables. These factors can be attributed to consumer behaviour towards upcycling clothing.

Labelling or Naming of the factors

After the process of extraction and factor loading, it was observed that 7 variables which were loaded to factor 1 can be named as: Occasion & Type of upcycled clothing/ accessories. The second factor got 2 variables loaded on it and according to the nature of variables it can be named as: Knowledge of Sustainability and Interest in Artistic Appearance. The Third factor got 3 variables loaded on it and according to the nature of variables it can be named as: Knowledge of Environmental Impact and Adoption of Upcycling at Home for Modern Look. The Forth factor got 2 variables loaded on it and according to the nature of variables it can be named as: Knowledge of Circular Economy and Willingness to pay for upcycled clothing.

The Fifth factor got 3 variables loaded on it and according to the nature of variables it can be named as: Upcycled clothing Value and Willingness to buy from companies at reasonable higher prices. The Sixth factor got 2 variables loaded on it and according to the nature of variables it can be named as: Uniqueness and Minimalistic Design Appeal. Finally, the Seventh and Eighth factors got 1 variable loaded each on them and according to the nature of variables it can be named as: Convinced by companies' justification to buy upcycled clothing AND Vintage Appeal.

Variable No.	Description	Loading Value
Factor – 1: Occasion & Type of upcycled clothing/ accessories		
6	Everyday wear (T-shirts, jeans, etc.)	0.835
8	Formal wear (office, business etc.)	0.729
9	Occasional Festival or Party wear	0.669
12	Accessories (bags, scarves, hats, etc.)	0.817
11	Home textiles (curtains, cushions, rugs, etc.)	0.785
7	Footwear	0.679
10	Others	0.684
Factor – 2: Knowledge of Sustainability and Interest in Artistic Appearance		
3	Aspects of sustainability in fashion	0.75
17	Artistic, handcrafted appearance	0.782
Factor – 3: Knowledge of Environmental Impact and Adoption of Upcycling at Home for Modern Look		
1	Environmental impact of apparel industry, including waste generation and resource consumption	0.825
4	DIY at Home	0.522
14	New/Modern look	0.612
Factor – 4: Knowledge of Circular Economy and Willingness to pay for upcycled clothing		
2	Circular economy in fashion	0.698
19	Expectation regarding the price of up-cycled clothing	0.792
Factor – 5: Upcycled clothing Value and Willingness to buy from companies at reasonable higher prices		
13	up-cycled designs add value to a product	0.687
5	purchased up-cycled products	0.671
20	How much more would you be willing to pay for a sustainable fashion	0.404
Factor – 6: Uniqueness and Minimalistic Design Appeal		
15	Unique one-of-a-kind designs	0.733
18	Minimalist design	0.793
Factor – 7: Convinced by companies' justification to buy upcycled clothing		
21	justified by brands to charge extra for sustainable products	0.806
Factor – 8: Vintage Appeal		
16	Vintage look	0.888

The results of the factor analysis indicate that the consumers prefer upcycled clothing for everyday wear such as T-shirts, jeans and accessories such as bags, scarves, hats, etc. over other occasions & types of clothes such as formal wear, during festivals, for home linen and footwear.

It also appears that the consumers who have sufficient knowledge of sustainability tend to show interest in artistic appearance of upcycled clothing. While consumers with knowledge of the environmental impact of the apparel industry, tend to adopt upcycled clothing practices at home, for instance- repurposing the clothes and other articles through Do It Yourself (DIY) projects at home

As per the opinion of consumers, knowledge of circular economy and willingness to pay for upcycled clothing are closely related as circular economy conscious consumers are willing to pay slightly more (5-10%) for upcycled clothing. Consumers who believe that Upcycled clothing adds prevent environmental degradation are willing to buy from companies at reasonable higher (5-10%) prices.

Consumers with an expectation and preference for uniqueness find the minimalistic design of upcycled clothing more appealing than any other aspect. A few consumers feel that companies charging extra for uncycled clothing is justified. A few other consumers associate vintage look with upcycled clothing.

CONCLUSION

In general, we can conclude that a majority of the consumers are aware of concepts such as sustainability, upcycling, and the environmental impact of the apparel industry. However, their preferences are limited to occasions and types of clothing/ accessories due to the unique appeal of uncycled clothing. The majority of the consumers are willing to pay slightly extra over the regular prices for the environment but they also believe that charging a hefty price for sustainability by companies is not justified.

In most of the cases, knowledge or awareness is highly associated with preferences to certain type or appeal of upcycled clothing such as: 'knowledge of environmental impact' was found to be associated with upcycling at home (DIY) for a modern look, 'knowledge of sustainability' was found to be associated with preference of consumers towards artistic appearance of upcycled clothing, and 'the knowledge of circular economy' was majorly associated with willingness to pay higher for upcycled clothing.

LIMITATIONS OF THE STUDY

This study on consumer behavior towards upcycled clothing in India, provides valuable insights but has several limitations that should be considered while interpreting the results and planning future research.

- The sample size of 65 respondents is relatively small for a country as populous and diverse as India. This limits the generalizability of the findings across different regions, cultures, and socioeconomic groups within the country.
- Study relies primarily on quantitative survey data analysed through statistical techniques like confirmatory factor analysis. While this approach effectively identifies key factors influencing consumer attitudes, it may overlook deeper qualitative insights into consumer motivations, barriers, and nuanced perceptions that require more exploratory or mixed methods research.
- Cross-sectional design of the study, which captures consumer attitudes and behaviors at a single point in time. Given that sustainability attitudes and market dynamics are rapidly evolving, longitudinal studies would better capture changes in consumer awareness and acceptance of upcycled clothing over time.
- Finally, there can be some other limitations such as time, convenient sampling design, over representation of few respondent demographic groups and researcher's unintentional biasedness.

FUTURE RESEARCH DIRECTIONS AND GAPS

The literature reveals several critical gaps requiring attention. Peña-Vinces et al. (2022) identified significant under-representation of qualitative, experimental, cross-cultural, and longitudinal studies. JSciRes (2024) emphasized that there are very limited studies conducted in developing economies, where most textile manufacturing occurs. Future research should focus on integrated approaches combining technological innovation, policy frameworks, and consumer psychology to advance understanding of upcycling trends. The attitude-behavior gap remains a persistent challenge, while regional studies from developing economies like India require more attention as they play a crucial role in the global apparel supply chain.

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