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A Study on Sustainable Consumption and Disposal of Apparels in Urban India: A Case Study of T-shirts

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A B S T R A C T

Consumption and disposal of apparels is an every-day occurrence whose environmental impact is huge but, largely neglected both in theory and practice. Consumers interactions with an apparel account for 10% of an apparel's climate impact. Each of the following stages of consumption have a specific impact: acquisition, caring, storage, usage, and disposal. The post-usage disposal entails either a closed loop or an open loop of waste. Both the stages in the product's life-cycle are affected by psychological and socio-cultural facets of consumers and their environment. The existing literature focuses on non-Asian contexts, mostly north American and European. Therefore, thispaperaims to use an inductive approach to study the urban Indian perspective on sustainable apparel consumption and disposal, through the case study of T-shirts.

1. Introduction

The life-cycle of an apparel span across 5 stages: extraction, production, distribution, consumption, and disposal. The global north is largely associated with consumption while the global south is with production (Brooks, 2015). However, with rising non-American and non-European economies, more than just the 4 Asian tigers, India is growing fast (Press Trust of India, 2022). Domestic consumption accounts for 70% of the apparels in India (FICCI, 2018b).The study focuses on India's urban areas that account for 34.93% of India's population (World Bank, 2022) and 20% of the apparel market (Sabnavis et al., 2019). They also account for 70% of waste generation (Paoli, 2015) and 75% of carbon dioxide emission (Ruiz-Real et al., 2018).The fashion industry is the world's 2nd biggest polluter after petroleum, according to the Danish Fashion Institute (Gracia, 2015)In India, the textile industry is recognized as a red category industry: having a pollution index of more than 60 (CPCB, 2016).

12.6 million people are prone to environmental health risks, according to WHO (Nielsen, 2019), especially 80% of the Asian population (UNCTAD, 2021). Even though the larger zeitgeist is marred with cynicism and denial, there is a need to investigate dormant and less-documented activities such as the consumption and disposal of fashion apparels (Fletcher &Tham, 2019).Existing literature focuses on non-Asian contexts, mostly north American and European. Literature related to Asian consumption are more market-oriented than design-oriented (Khare& Rakesh, 2010). Therefore, thisstudy aims to map localised and socio-culturally relevant patterns of consumption and disposal. It adopts an inductive approach, through the case study of T-shirts. T-shirts are popular because they transcend barriers of body sizes, care routines, climates, cultures, economic statuses, style preferences etc (Furman University, 2022). The T-shirt market was worth $811.7 million in India in 2018, with the highest growth rate in Asia-Pacific (Bhatt, 2018).

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List of abbreviations

AEIOU framework: activities, environment, interactions, objects, and users
ASCD: Association for Supervision and Curriculum Development
CPCB: Central Pollution Control Board
DIY: do-it-yourself
DPSIR framework: drivers, pressures, state, impact, and response model of intervention
FICCI: Federation of Indian Chambers of Commerce and Industry
NCR: National Capital Region
MISTRA: Stiftelsen För MiljöstrategiskForskning
OECD: Organisation for Economic Co-operation and Development
SAC: Sustainable Apparel Coalition
UNCC: United Nations Climate Change
UNCTAD: United Nations Conference on Trade and Development
WHO: World Health Organisation

2. Objective

The aim of the study is to study patterns of consumption and disposal of T-shirts in urban India.

3. Research methodology

The methodology progressed as follows: research objectives, review of literature, structured interview with consumers, wardrobe audit, T-shirt upcycling ideation workshop, research findings, discussion, and limitations.It comprises of 3 sections: (1) Approach, (2) Data collection, (3) Data analysis. (4) Case study of T-shirts.

3.1. Approach

The study utilizes design through research wherein a researcher performs activities that are conventionally called research, irrespective of the awareness that their activities are design (Frayling, 1993). It uses an ethnographic approach: aiming for an analytical, descriptive, honest, nuanced, sensitive, and well-informed account of how life is lived in a period of time (Ingold, 2013). Consequently, it is exploratory in nature. It focuses on anthropological nuances of the following discourses for long-term insights: design thinking, economics, psychology, and sustainability (Zhang et al., 2021).

It uses the grounding theory which is a blend of emic (insider) and etic (outsider) perspectives (Peters, n.d.).It approaches the subject using a balance of considerations: blend of inductive reasoning (deriving specific observations from a general theory) and deductive reasoning (deriving a general theory from specific observations (Govier, 1987). It analyses the subject using systems thinking: set of interdependent elements (present in sub-systems) that work together for a common aim (Acaroğlu, 2017).

3.2. Data collection

Data was collected through multiple channelsduring January to April 2022, based on non-probability convenience sampling.The detailed description of data collection is mentioned in Table 1.

Table 1 - Data Collection Tools Used in the Study

Tool	Aim	Number of participants	Participant sampling
Day in the life	Document every-day routine, with a focus on apparel care activities.	5	Convenience
Private journal study	Document cultural and psychological connection with apparel consumption.	2	Convenience
Review of literature	Study consumption and disposal patterns of apparels in non-Asian contexts, especially in USA and Europe.	-	-
Structured interview	Study consumption pattern of apparels.	6	Convenience
	Study e-commerce's effect on consumption.	2	Convenience
Survey	Study consumption and disposal patterns of T-shirts.	102	Convenience,

			and snowball
T-shirt upcycling ideation workshop	Study consumers' T-shirt upcycling ideations.	6	Convenience
Unstructured interview	Study consumption pattern of apparels.	15	Convenience, and snowball
Wardrobe audit	Document ritual of decluttering a wardrobe.	2	Convenience
	Document arrangement and quantity of apparels.	8	Convenience

3.3. Data analysis

The collated data was analysed using an inter-disciplinary approach: integrate knowledge from different disciplines (Jensenius, 2012). That approach was used owing to systems thinking which encompasses variables across different activities, events, needs, phenomenon, stakeholders etc. For instance, purchase of an apparel was not seen only from a classical economic perspective of it being a transaction of goods. Rather, it was seen as a complex event of decision-making, need fulfilment, socio-economic status etc. Theories from 4 discourses were used: design thinking, economics, psychology, and sustainability. The detailed description of data analysis is mentioned in Table 2.

Table 2 - Data Analysis Tools Used in the Study

Discourse	Theory	Reference
Design thinking	AEIOU framework, causal loop diagram, and DPSIR framework.	(Kristensen, 2004; ASCD, 2009; Fitzpatrick, 2018; Lannon, 2018).
Economics	Commodity fetishism, cowboy economy, doughnut economics, and nudge theory.	(Pradeep, 2015; Tom, 2015; Raworth, 2017; Naidoo &Gasparatos, 2018).
Psychology	4 stages of competence, cognitive dissonance, liminality, and myopic loss aversion.	(OECD, 2013; Bly et al., 2015; Grigorian, 2018; Stöhr, 2021).
Sustainability	Accreditation or certification, actor-network theory, circular economy, and life-cycle analysis.	(Norris, 2010; Voncina, 2010; OECD, 2017; Barnhoorn et al., 2018).

3.4. Case study of T-shirts

T-shirt is a short-sleeved top that covers the upper part of the body. It is utilised widely because it is affordable, comfortable, communicative if graphic, easy-to-care-for, lightweight, and unisex. It cuts across different apparel lines: athleisure, business casual, loungewear, merchandise (of music bands, theme parks, TV shoes etc), school uniform, sleepwear, and streetwear. It was quantified at 2 billion pieces in 2021 (Richards, 2021). It is worth $43.47 billion as of May 2022 and is projected to grow by 5.5% in 2023 (Statista, 2022). In India, the T-shirt market was worth $811.7 million in 2018 of which 83% was attributed to men's T-shirts (Bhatt, 2018). Branded T-shirts are in vogue: Adidas, Fila, Guess, Hollister, Lacoste, Levi's, Nike, Supreme, Tommy Hilfiger, USPA etc (Hartzog, 2022).

The history of T-shirt began with the British royal navy allowing its sailors to wear it as an outer garment on deck in 1900 (Bass-Krueger, 2019). In the same year, (1) Jockey sold tops without buttons named 'bachelor undershirt', (2) Union workers cut white-coloured button-down onesie in half (Furman University, 2022). In 1920, Merriam-Webster added it to its dictionary (Hood, 2022). In the same year, Francis Scott Key Fitzgerald used it his book 'This side of paradise'. In 1938, Sears, Roebuck and Company advertised it as an outer garment (Richards, 2021). In 1939, farmers and miners wore it as an outer apparel.

In the coming year, films such as 'Wizard of Oz' (1939), 'Place in sun' (1951), 'Streetcar names desire' (1951), 'Rebel without a cause (1955), 'Depp' (1977) popularised it amongst the masses. 1960s onwards, people used it to participate in political protests: "Accidental anarchist" by Jamie Reid (1980), "58% don't want Pershing" by Katharine Hamnett (1984), "Advantages of being a woman artist" by Guerilla Girls (1985) etc (Bekhrad, 2018). In 1969, tie-and-dye shirt became popular. In 1970, it was accepted as a unisex apparel. In 1990, double-stitch replaced single-stitch to increase its durability. In 2018, an exhibition titled 'T-shirt: cult, culture, subversion' was held at the Fashion and Textile Museum in London which had T-shirts as its exhibits (Newbold, 2018).

4. Research findings

The research findings comprise of 3 sections: (1) Consumption patterns of T-shirts, (2) Disposal patterns of T-shirts, (3) Impact of circular economy on consumption and disposal of T-shirts.

4.1. Consumption patterns of T-shirts

Consumption is a decision-making process that involves spending resources (effort, money, and time) on a product for pleasure or satisfaction (Zhang et al., 2021).It is intermittent instead of continuous (Shim, 1995).It is of3 types: (1) Core: product's core function, (2) Tangible: product's aesthetic value (3) Augmented: product's perceived value (Gordon, 2021). It is affected by (1) Demography: age, education, family, gender, profession etc, (2) Emotionality: close, medium, or nascent (SAC, 2019), (3) External validation: beauty standard, identity formation, reference group's acceptance etc (Easey, 2008), (4) Lifestyle: health, materialism, value system etc (Roach et al., 2019), (5) Purchasing power. Consumption has 4 stages: acquisition, caring, storage, and usage.The patterns of T-shirt consumption in urban India is presented in Table 3.

Table 3 - Patterns of Consumption of T-shirts in Urban India

Stage	Practice	Reference
Acquire a T-shirt	Format (digital store): (1) Negative aspect: added logistics and impulsive consumption (50%), (2) Positive aspect: decreased commute to store.	[survey].
	Format (physical store): travel longer distances to access better collections in adjacent city. For example, (1) Go from Faridabad to Delhi, (2) Go from Nerul in Navi Mumbai to Colaba in Mumbai.	[unstructured interview].
	Frequency: 29% of cisgender females and 42% of cisgender males buy apparels more than once in a month.	(Cotton Inc., 2019).
	Preference: natural fabric considered to be sustainable (70.6%).	[survey].
	Quantity (per individual): 1-10 T-shirts, both before and after Covid-19 (56.86%).	[survey].
Care for a T-shirt	Air dry instead of machine dry but latter is popularizing due to fast-paced lives and lack of space in residential spaces.	[structured interview].
	Frequency: wear a T-shirt only once before washing (42.2%).	[survey].
	Gendered responsibility: females instead of males.	(Laitala et al., 2020).
	Harsh routine: high amount of wash cycles even for lightly soiled T-shirts, ignorance towards care labels, and socio-cultural factors (view on bereavement, ill-health, menstruation etc).	[structured interview].
	Hygienist movement (perceived cleanliness instead of actual cleanliness), accelerated by Covid-19.	(Martinez-Pardo et al., 2020).
	Informal information source: homespun wisdom, random guess, trial and error etc instead of instruction manual or professional website.	(Brico& Jensen, 2016).
Store a T-shirt	Habit: pile both clean and dirty laundry on spare chairs (61.8%).	[survey].
	Inactive storage: invisible, permanent, temporary, and transitional.	(Cluver, 2008).
	Inefficient storage: co-storage of non-textile items, hue-based arrangement, and pile instead of stack.	[structured interview].
	Quantity (per household): 50-75 T-shirts (72.2%).	[survey].
	Overflowing and unaccounted wardrobe, as shown in Figure 1: participants' views: "chaotic," "excess," "irritation," "mess," "not enough" etc.	[wardrobe audit]
Wear a T-shirt	Emotional attachment: achievement (first job, graduation, relocation etc), childhood memory, gift from a friend, heirloom, souvenir from a trip, sports jersey etc.	[structured interview].
	Frequency:	
	• 25-30 times per year, for an average of 4.6 years.	(Drew et al., 2021; Stöhr, 2021).
	• Decrease use by 10-15% after Covid-19.	(ILO, 2020).
	• Use 20-30% of apparels in wardrobe.	(Quirós, 2019).
	• Use T-shirt 2 times in a go (44.1%) or 3-5 times in a go (12.7%) to avoid doing laundry often.	[survey].

4.2. Disposal patterns of T-shirts

Disposal is motivated by a product being deemed unusable for its original purpose (Redress, 2014). An apparel's following features deems it ready for disposal: (1) Aesthetic: boring, non-coordination with other apparels, non-trendy, or stained (Büyükaslan et al., 2015; Lee et al., 2013), (2) Comfort: non-fit (silhouette, size etc) (Goudeau, 2014), (3) Cost of using apparel is more than cost of disposing it (Shim, 1995). (4) Durability: single-use, or worn out (Dombek-Keith, 2008; Jain, 2021), (5) Emotionality: represent past self or past time; for example, disposing maternity wear after pregnancy is seen as a symbolic recovery ritual (Cluver, 2008; Gwilt, 2013).

Consumer-led motivations for disposal are manifold. Ethical or moral responsibility to consume less, and also do social good by donating apparels (Gwilt et al., 2015; Agbebo, 2020). Ignorance to dispose apparel even when it is in a good condition or when only a single component breaks; worth $40 billion per year (Lisca et al., 2021). Life-transition (such as divorce, empty nest, parenthood, relocation, retirement etc) leading one to separate oneself from the old self and integrate into the new self (Grigorian, 2018). Motivation by a cohabitant to clean one's wardrobe, in most cases it is parents or spouses (Maldini&Stappers, 2019). Need for more storage space, or a sudden realisation (Bubna, 2016).

Process

According to the disposition decision taxonomy by American professor Jacob Jacoby: disposal is either permanent or temporary (Goudeau, 2014). There is another classification: (1) Involuntary: accident, disaster, misplacement, loss, theft etc, (2) Voluntary (Grigorian, 2018; Maldini&Stappers, 2019). Voluntary disposal is of 2 types: (1) Closed loop disposal or circular economy: recycle, repair, and reuse, (2) Open loop disposal: abandon or throw, destroy (burn, shred): contribute to dumpsites and landfills (Zhang, 2014; Sinha et al., 2021). The survey found that 66.7% of respondents use a T-shirt for more than 12 months, before disposing it. Only 9.8% of respondents use a T-shirt for 1-5 month(s) before disposing it.The disposal process is as follows:(1) Recognise problem, (2) Be triggered to dispose, (3) Collect apparel, (4)Sort and shift apparels to a transition space until one is ready to finally dispose it, (5)Analyseand select disposal method, (6)Dispose apparel, (7)Ponder about disposed apparel (Weber, 2015).

The survey found that 35.3% of respondents are willing to dispose a T-shirt even if one of the component breaks. People tend to dispose fast fashion apparel faster (Weber, 2015). Choice of disposal method is based on the following factors: (1) Convenience (Nanayakkara, 2019), (2) Familiarity with disposal method (Laitala, 2014), (3) Interest level (Weber, 2015), (4) Personal benefit (Agbebo, 2020), (5) Simplicity of disposal method (Frame et al., 2010), (6) Speed of disposal method (Yee et al., 2016), (7) Time available with consumer to dispose apparels. The survey found the following preferences: donate (81.4%), repurpose into a dusting cloth (56.9%), recycle (13.7%), lend or swap (10.8%), throw in trash (8.8%), and lease or resell (2.9%). In terms of wanting to repurpose aT-shirt, the following were mentioned: baby bib, bandana, bow sleeve, braided rug, Christmas ornament, coaster, grocery bag, half apron, hand warmer, oven glove,pet hammock, plant tie, pom-pom, scrunchie, tassel, toy clothing, wall art etc.
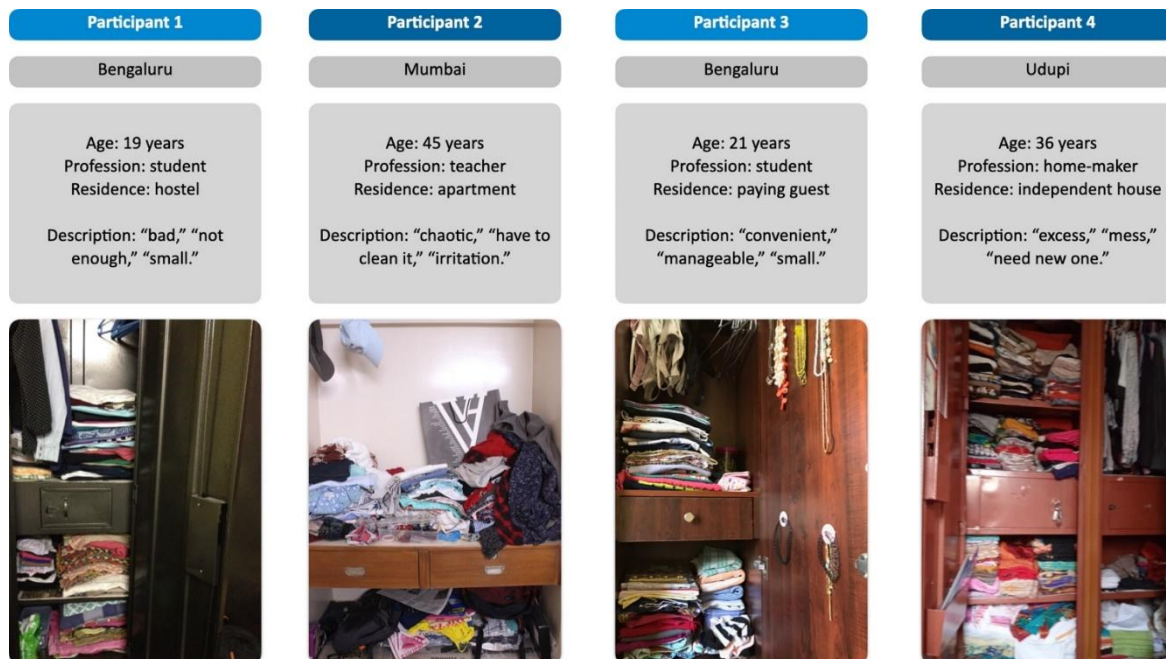

Participant 1	Participant 2	Participant 3	Participant 4
Bengaluru	Mumbai	Bengaluru	Udupi
Age: 19 years Profession: student Residence: hostel Description: "bad," "not enough," "small."	Age: 45 years Profession: teacher Residence: apartment Description: "chaotic," "have to clean it," "irritation."	Age: 21 years Profession: student Residence: paying guest Description: "convenient," "manageable," "small."	Age: 36 years Profession: home-maker Residence: independent house Description: "excess," "mess," "need new one."

Fig. 1 - Wardrobe Views of 4 Participants Who Volunteered for the Study

Relevance

It is the 3rdlargest segment of municipal solid waste in India (Khanna et al., 2020). In landfills, they create biogas, leachate, and surface water run-off (Fraser, 2011; Büyükaslan et al., 2015). On a theoretical front, waste is off the following types: (1) Wasted capacity: product not used completely, (2) Wasted embedded value: material not recovered from waste stream, (3) Wasted life-cycle: product reaches end-of-life prematurely due to planned obsolescence, (4) Wasted resource: material cannot be regenerated over time (FICCI, 2018a).

More than 50% of adults view apparels meant for disposal or disposed apparels as having no value (O'Mahony&Gwilt, 2016). They might resort to abandoning or throwing apparels in the bin alongwith other wastes. It ends up in either of the following places: dumpsite (for example, in Delhi/NCR: Bandhwari, Bhalswa, Ghazipur, and Okhla), garbage pit, landfill, open ground, or ocean (Cluver, 2008; Sinha et al., 2021; Spellings, 2022). 82% of landfills tend to release leachate which harm groundwater level, soil etc (Lee, 2012).

4.3. Impact of circular economy on consumption and disposal of T-shirts

Circular economy or collaborative consumptionaims to decrease leakage or loss of energy and material when (1) Product cannot be reused or (2) When a product's component cannot be refurbished or remanufactured or (3) Product's material cannot be recycled (Butterworth et al., 2013).It is a sub-set of sustainability which stimulates economic actors to use resources more efficiently (Geissdoerfer et al., 2017).It increases product lifespan by 2 times and product usage by 100 times, both which in-turn decreases product's climate impact by 47% (Svensson et al., 2020). For example, increasing a T-shirt's lifespan by 10% prevents the release of 1,00,000 tonnes of carbon dioxide (Hernandez et al., 2020).Globally, circular economy was worth $560 billion in 2021 (Lisca et al., 2021) and is projected to grow to $192 billion (Chen et al., 2021). Its relevance to T-shirt consumers is mentioned in the following table.

Table 4 - Impact of Circular Economy on Consumption and Disposal

Example	Description	Reference
Recycle	Approach: quaternary instead of secondary or tertiary.	(Muthu, 2019).
	Context: DIY movement led by homespun wisdom and trial and error.	(Kaplan, 2013; König, 2013).
	Tool: collection bins in stores, and frugal upcycling at household level.	(Rosa, 2016).
Repair	Challenge: ease of buying new T-shirt (58.8%), lack of time (37.3%), lack of knowledge (27.5%), lack of interest (24.5%), lack of confidence (23.5%), and lack of sewing kit (19.6%).	[survey].
	Context: anti-capitalism, broken world thinking, creative thinking, frugality, pragmatism, and self-reliance.	(Gwilt&Rissanen, 2011; Ahnfelt, 2016).
	Stakeholder: older generation instead of younger generation.	(Jain, 2021).
Reuse	Challenge: lack of cleanliness,old clothes as a marker of dire financial status.	(Norris, 2015; Kuwonu, 2018).
	Tool: non-monetary donation (81.4%) instead of financially benefitting methods (consigning, leasing, renting, reselling etc).	[structured interview, and survey]

5. Summary and Conclusion

The section comprises of 3 sections: (1) Conclusion, (2) Future scope and (3) Limitation.

5.1. Conclusion

The macro-concepts of consumption and sustainability have been covered extensively in research, mostly in American and European contexts. The common observation has been made that sustainability is being adopted in the industry, and it tends to be limited to niche innovations (fibre segment and recycling) and regulatory policies (wage segment). Furthermore, due to lack of awareness, consumers cannot access and assimilate sustainable practices into their habitus (Ahnfelt, 2016). In the Indian context, research has been done on consumption and its scope of sustainability but, it tends to be market-oriented than design-oriented (George et al., 2020).

With regard to sustainable consumption, the study found both similarities and differences in the Indian context when compared to pre-existing research in non-Asian contexts. Following are the similarities: (1) Attitude-behaviour gap amongst consumers, (2) Fair labour being equated to minimum wage, (3) Lack of standardisation or varied definitions of sustainability, (4) Lack of understanding of effect of every-day consumption habits or practices on environment, (5) Local production being viewed as sustainable, (6) Natural fibre being viewed as sustainable, (7) Pseudo-recycling especially on the producer front, (8) Unfavourable pricing model.

The 1st difference found is that sustainable consumption is not an alien theoretical concept introduced to the Indian society by academia and industry. Sustainable consumption was part of the traditional lifestyles. However, occurrences such as the digital turn and globalisation imported capitalism and materialism. The 2nd difference (in contrast to the previous point) is that sustainability is largely not cared for by Indian consumers. The 3rd difference is that apparel-related sharing services such as consign, rent, resell etc are not culturally in sync with a society for whom new purchases are a reflection of socio-economic status. The 4th difference is that there is a lack of government regulation or initiatives on EPR, waste handling etc.

With regard to the specific case study of consuming and disposing T-shirts, the similarities between non-Asian context are India is as follows: (1) Acquisition by both online and in-store means (2) Convenience in a fast-paced life, (3) Emotional attachment to specific T-shirts, (4) Hoarding due to high purchasing power, (5) Reflection of identity, especially for the younger generations. The differences between non-Asian contexts and India are as follows: (1) Aesthetic being valued over functionality except in fitness-aware consumers, (2) Disposal by donation or repurposing into dusting cloth instead of consignment, renting or resale, (3) Harsh care routine informed by habit than information, (4) Long-term utility: at-least for more than 12 months.

5.2. Future scope

The insight from ethnographic data about consumption and disposal can be adopted into the design stage (Dombek-Keith, 2008). From silhouette design to cut-make, from fabric choice to fabric finish, and all the other pre-consumer activities can gain from the on-the-ground needs and practices of the consumers. For example, digital product-trial feature helps avoid the consumers' commute from home to store which alone accounts for 11% of an apparel's climate impact (Östlund et al., 2020). Cosmopolitan's campaign 'Tummy series' normalises the antithesis to the intense glare of fashion-related perfection that cisgender females are forced to adhere to (Kantawala, 2021).

Kathleen Michelle Dombek-Keith's apparel 'Suit yourself' adapts to wearer's body changes (Gwilt&Rissanen, 2011). Unbound Merino's no-wash T-shirt decreases the need for laundry which alone accounts for 26% of an apparel's climate impact (Nowak, 2016). Possible areas of integrating consumer insights into the design process are as follows: adjustable sizing, capsule wardrobe, gender-neutral silhouette, less intensive laundry routine, repair kits and workshops, resource-justified pricing, season-less apparel, visible mending aesthetic etc. In a nutshell, the journey from theory to practice is a multi-stage process (1) Ignorance or unconscious incompetence, (2) Awareness or conscious incompetence, (3) Learning or conscious competence, (4) Mastery or unconscious competence.

The study's limitations are mentioned in Table 5.

Table 5 - Limitations of the Study's Research Design

Limitation	Focus	Description
Discourse	Bi-disciplinary	Despite adopting an interdisciplinary approach, there was a focus on cognitive psychology (the gestalt school) and micro-economics. It led to a lack of counter-arguments and theories from other fashion-allied discourses.
Ethnography	Bias	The question formulation for research tools were made, being aware about the lifestyle in urban areas. It may have led to non-inclusion of unique cases, outliers etc.
Geography	Vast	Urban India covers various cultures, geographies, norms etc. Simplifying specific nuances to form a generalised perspective does not do justice to ethnography which is rooted in details.
Participant demography	Cisgender female	8 of the 9 tools were dominated by cisgender females. The study did not aim for that gender skewness but, it was observed as the study progressed.
Participant sampling	Convenience	The participants and respondents are approached by the researcher or by the acquaintances of the researcher
Reasoning	Inductive	Case study about consumption and disposal patterns of T-shirts is not representative of the scope of sustainability in apparels in general because each apparel warrants a specific motivation and pattern of usage.
Reference	Non-Asian	(1) 59.37% of the 64 theses referred to, are from European educational organisations. (2) 71% of the 69 psychology theories referred to, are by American academia. (3) Lack of reference to local stakeholders such as tailor etc.
Transfer of responsibility	From producer to consumer	Production accounts for 80% of textiles' climate impact, according to MISTRA (UNCC, 2020).

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