

# CSIP Working Paper 2022

Mapping the Landscape of Freecycle Giving ('Freecycling') in India

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### **ABSTRACT**

Sustainable production and consumption patterns require a shift from the typical linear process and throwaway mentality to models that are based on the circular flow of products and materials. This research explores one such alternative model of product use and giving called freecycling. Unlike selling, exchanging or donating used goods with the expectation of reciprocity in cash or kind, freecycling is a nonmonetary and non-reciprocal exchange of pre-owned items among strangers, making it a unique consumer- to-consumer interaction. In this, freecycling differs from traditional giving practices of pre-owned items in India; however, knowledge about Indian freecycling groups and the attitudes, behaviour and motivation of members is scarce. The goal of this study was to examine the emerging practice of freecycle giving (hereafter, freecycling) in India through a mapping of online and offline groups, understanding how it differs from conventional second-hand giving practices, and the motivations of members to participate in a collaborative community that operates solely as an avenue for non-reciprocal giving. Data was collected through primary surveys with members of various freecycling groups on Facebook and interviews with waste management practitioners. Secondary data was gathered to capture the presence of freecycling across India. The results demonstrate that participants' attitudes vary greatly from global research and literature, and that attitudes towards non-monetary and non-reciprocal exchanges of pre-owned commodities are largely positive, among both freecycling group members and waste management practitioners.

Key words: freecycling, circular economy, waste reduction, second-hand giving, India, pre-owned



#### **ACKNOWLEDGMENTS**

I am naturally a doer. Research and writing, particularly in a structured and organised format, is thus an uphill task for me. I applied for this fellowship to learn and also challenge myself. I chose a topic that was personal - one that I was living everyday through my low waste, low impact lifestyle. My topic was also part of the professional waste management work I engage in. When I first wrote my proposal, I did not expect that I would draw from experiences of both these worlds. Neither did I expect the multiple future research avenues that this experience would lead to when I embarked on my research.

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The views expressed in this paper are those of the author, and do not necessarily reflect the views of the Centre for Social Impact and Philanthropy or Ashoka University.



# **TABLE OF CONTENTS**

1	Introduction	08
	1.1 Research questions	10
	1.2 Structure of the paper	10
2	Structuring Freecycling among Second-Hand Giving Practices in India	11
	2.1 The practice of selling used goods	11
	2.2 The practice of exchanging used goods	12
	2.3 The practice of donating used goods	12
	2.4 The practice of sharing used goods	13
	2.5 The practice of alternative giving	13
	2.6 The Freecycling Network	15
3	Research Methodology	17
	3.1 Limitations of the study	20
4	Findings: Overview of the Freecycling Landscape in India	21
	4.1 Mapping the freecycling groups in India	21
	4.2 Content mapping and analysis of posts	24
	4.3 Freecycling group member profiles	28
5	Findings: Attitudes, Motivations and Behaviour of Freecycling Group Members	30
	5.1 Behaviour patterns with used items prior to joining the freecycling group	30
	5.2 Motivations of joining freecycling groups	30
	5.3 Giving and receiving patterns on freecycling groups	31
	5.4 Observer patterns of freecycling groups	32
	5.5 Waste management practitioners' perception of freecycling	33



6	Discussion and Conclusion	34
7	Appendices	36
	A: Survey Form Used for Participant Survey	36
	B: Interview Questionnaire: Person Interviews of Waste Management Practitioners	42
	C: List of 72 Freecycling Groups in India	45
8	References	50

### **LIST OF TABLES**

- <u>Table 1: Types of second-hand goods exchanges in India</u>
- Table 2: Profile summary of the Facebook freecycling groups selected for the study
- Table 3: Overview of posts reviewed for content across five Facebook freecycling groups
- Table 4: Summary of post occurrences across product categories
- Table 5: Comparison of the reasons why people give and receive vs. their original motivations of

joining the group

### **LIST OF FIGURES**

- Figure 1: A government organised swap shop in Alappuzha, Kerala
- Figure 2: A 'Neki ki Deewar' set up by the government in Delhi
- Figure 3: Sample post requesting for or seeking a used item
- Figure 4: Map indicating the location of freecycling groups in India
- Figure 5a: Percentage of freecycling groups across the different states of India
- Figure 5b: Platforms on which freecycling groups are prevalent
- Figure 5c: Percentage of group membership range
- Figure 5d: Groups with the maximum number of members
- Figure 6: Sample seek post for a waste item
- Figure 7: How participants learnt about freecycling



#### **KEY TAKEAWAYS:**

- Freecycling is different from conventional second-hand giving models practised in India as it is a non-monetary and non-reciprocal exchange of pre-owned items among strangers that allows group members the choice to give, receive, give and receive, or not participate in either giving or receiving but instead remaining as observers on the group.
- In India, the highest number of freecycling groups was identified in the state of Maharashtra, followed by groups from Tamil Nadu, Karnataka, and Delhi-NCR.
- There were more givers than receivers among the survey respondents and a larger participation by women than men. A majority of the survey participants were under the age of 40.
- The research suggests that there is a growing awareness of freecycling not just in the larger cities of India, but also in smaller states and towns. Many places also have sub-local groups that operate out of a specific location such as a residential complex or geographical boundary such as a neighbourhood.
- Of the total post occurrences that were studied across five groups, clothing and apparel were the most frequently offered, although only 5.77 per cent of posts were seeking these items. In general, it was evident that there is a discrepancy in what members were requesting and what people were offering.
- Certain pre-owned items such as used containers, which would conventionally be considered as waste, are also being transacted on freecycling groups.



#### 1. INTRODUCTION

India is one of the world's fastest growing economies. Sixty percent of its annual gross domestic product (GDP) is powered by private domestic consumption and is set to double to USD 6 trillion by 2030, the year earmarked for all nations to reach the UN's sustainable development goals (SDGs).¹ This increasing level of consumption is fuelled by linear production models that rely heavily on finite raw material resources and result in unmanageable deposits of pre- and post-consumer waste. Globally, most commodities are designed to become non-functional and obsolete in a short period of time, further contributing to the 'take-make-dispose' consumption mentality (Ellen MacArthur Foundation).

In the last decade, the 'circular economy' model has evolved as a move away from the unsustainable linear economy model. In a circular economy, the goal is for resources and products to be reused or recycled indefinitely (Ellen MacArthur Foundation). This also eliminates the reliance on conventional waste disposal methods like landfills and incineration, and reduces municipal expenditure on waste management infrastructure (Ellen MacArthur Foundation, 89). One mechanism in a circular economy is the sharing of resources - either unwanted or sparingly used - between many consumers. With an increase in climate and environmental awareness, consumers around the world are exploring alternative consumption practices under the notion of a 'shared economy'. This new economy was brought to the fore in the work of Lisa Gansky (2010) and Botsman and Rogers (2010) who identified a set of practices which, they thought, 'would lead to a more sustainable economy'. Examples of shared economy models include channels that encourage extending the lives of commodities (e.g. the selling of second-hand goods), provide access-based consumption (e.g. renting or leasing goods or services), or encourage collaborative consumption (e.g. sharing of goods or services) (Belk 2014). There are several such digitally enabled shared business models in India—like resale (OLX), rentals (Furlenco), sharing (UberX Share), and subscriptions (Urban Company)—that facilitate access to underutilised assets, while being affordable and promoting economic and environmental sustainability.<sup>2</sup>

The practice of transacting in second-hand commodities is not novel; it existed well before the arrival of the Internet through garage sales, thrift stores, and barter exchanges. In India, the prevalent second-hand economy relies on informal collectors buying or accepting used items in the hope of reselling them. Another commonplace recycling practice is the bartering of old things—pre-owned clothes in particular—in exchange for useful goods like utensils (Bapat 2016). Typical non-monetary transactions involve reusables being handed down within families or being donated to charities. However, rather than revisit such established models, this study explores a nascent second-hand giving model called freecycling, usually practised in online groups that become an avenue for non-reciprocal commodity exchange with no financial incentives or conventional transactional norms.

<sup>1</sup>World Economic Forum, "Future of Consumption in Fast-Growth Consumer Markets: INDIA," Weforum.org, accessed July 28, 2022, https://www3.weforum.org/docs/WEF\_Future\_of\_Consumption\_Fast-Growth\_Consumers\_markets\_India\_report\_2019.pdf.

<sup>2</sup>World Economic Forum, "Future of Consumption in Fast-Growth Consumer Markets: INDIA," Weforum.org, accessed July 28, 2022, https://www3.weforum.org/docs/WEF\_Future\_of\_Consumption\_Fast-Growth\_Consumers\_markets\_India\_report\_2019.pdf.



Freecycling was introduced as a global community movement with the establishment of the Freecycle Network in Arizona in 2003 ("Freecycle"). According to the Cambridge Dictionary, freecycle is defined as "[the act of] giving away [something used or unwanted], as opposed to selling it or throwing it away, especially in an arrangement made via the internet". Resident volunteers create and manage location-specific freecycle groups as online communities on the Network's website. Decision-making around giving and receiving items rests solely with the community members. Unlike other sharing economy models, freecycle groups prohibit any kind of profit-making or bartering transactions. Thus, this new model of giving operates altruistically, independent of any formal entity or accountability.

The fundamental driving ideology of the Freecycle Network is its expected sustainability impacts, both in terms of consumption of resources and also reduction of waste in the environment. Freecycling not only helps families pass on reusable items to strangers, but also 'to declutter homes, save resources and reduce landfill waste in the process'. Most research on freecycling trends indicates motivations beyond environmentalism or altruism (Aptekar 2016). However, such studies are usually from developed countries whose per capita consumption, economic development, and cultural and demographic profiles are significantly different from that of India.

In India, the practice of freecycling seems nascent when comparing the total number of Indian groups on freecycle.org to those from other parts of the world. Interestingly, the concept has also been adopted globally by dozens of similar self-organised "freecycle" groups being facilitated and managed on online social networks like Facebook and WhatsApp. The idea has further manifested into exclusive or recurring in-person events like Dariya Dil Dukaan in India or GivingTuesday globally where giving is not limited to materials but also the exchange of knowledge and services. Although this practice is still evolving in India, studies that understand the profile of users within these groups and their respective markets—culturally and demographically—are missing. Existing literature also fails to highlight the impact of emerging waste reduction practices such as freecycling on the livelihoods of waste collectors, who have traditionally been instrumental in recovering resources from waste.

<sup>&</sup>lt;sup>3</sup> Anonymous, "Freecycle: Front Door," Freecycle.org, accessed September 30, 2022, http://freecycle.org.



# 1.1 Research questions

In line with these aims, the study was guided by the following research questions:

- What distinguishes freecycling from conventional practices of giving pre-owned items in India?
- Are freecycling groups in India concentrated in specific geographies such as urban centres and metropolitan cities and are the groups' memberships restricted to a prevalent member profile type?
- What are the underlying motivations for group members to give or receive in freecycling groups and what obstacles prevent non-participation among members?

# 1.2 Structure of the paper

In Section 2, a literature review distinguishing freecycling from existing practices of giving second-hand items in India, such as bartering, donating, sharing, and resale is presented. Section 3 describes the research methodology employed for the study including the limitations that were encountered. The following two sections present the findings of the study: Section 4 maps the existing landscape of freecycling in India, including group locations, member profiles, and content analysis of online posts; Section 5 focuses on an analysis of attitudes, motivations, and behaviour towards freecycling and second-hand items. The paper is concluded in Section 6 with summaries of the impact of this movement on waste management and an outline of suggestions for future research directions.



# 2. STRUCTURING FREECYCLING AMONG SECOND-HAND GIVING PRACTICES IN INDIA

Traditionally, India has a prevalent practice of reusing pre-owned and second-hand goods either by way of passing forward used items as gifts or donations or by selling them to informal collectors. In post-COVID India, with job and income insecurities and increased reliance on technology for purchases, the demand for used goods has grown (Bora 2021). This is visible in the mushrooming of multiple online marketplaces that trade in either multiple or specific commodities. Most second-hand consumption models focus on some reciprocal exchange of currency or goods or are entirely altruistic in nature, as is the case with donations to charities. Albinsson and Perera identify the importance of 'community' as a key factor in the motivations of organisers and participants participating in such marketplaces (Albinsson and Perera 2012). Organised by 'consumers for consumers', they identified five exchange arrangements derived from consumers' activities in 'clothing exchange' marketplaces: sharing, exchanging, donating, recycling, and trashing (Albinsson and Perera 2009).

In this section, I adapt this framework to elaborate on four commonplace practices of giving and/or receiving second-hand goods in India, that is, selling, exchanging, donating, and sharing. I also compare these four practices with the practice of alternative giving—under which freecycling can be categorised. Providing this review establishes why and how freecycling represents a unique phenomenon relative to other conventional forms of second-hand transactions. It is essential to note that recovering reusable or non-reusable items from waste is not considered in the scope of this study as the giver is not selecting the recipient and is merely participating in an established disposal system.<sup>4</sup>

# 2.1 The practice of selling used goods

In India, the most common method of giving second-hand goods has been by selling to *raddiwalas* or *kabadiwalas*.<sup>5</sup> These transactions usually involve one or two people conducting collections of old paper, books, magazines, non-working gadgets, broken furniture or glass to be sold to material aggregators. Specialised versions of this giving model are also observed in the form of roadside libraries where one can sell their old books and the vendor loans the books to others for a small fee (Radha G, n.d.). In this way, both the seller and the buyer have revenue-generating avenues and this motivates them to participate in this model. Entrepreneurs in India have taken this idea and built businesses (thrift stores and waste pick-up services) (Karelia 2019) and even websites (OLX, Quikr) to transact in second-hand goods.

<sup>&</sup>lt;sup>5</sup>Raddiwalas deal exclusively with paper waste whereas kabadiwalas collect other unwanted household items, including damaged or broken items



<sup>&</sup>lt;sup>4</sup>The activities performed by rag pickers, or daily wagers working as waste collectors, are either mandated by law or the used items are picked up from dumpsites or trash bins without the giver being actively involved in the act of giving.

# 2.2 The practice of exchanging used goods

Another unique concept prevalent in many urban parts of the county is the *bhandiwali* or *bartanwali*, that is, individuals facilitating the bartering or exchanging of used clothes and other household goods for utensils. This reciprocal transaction is carried out specifically by female members of certain communities, such as the Waghris, who go door to door, collect used clothing and give steel or plastic utensils in return and further sell the collected items to larger traders in exchange for money (Bapat 2016). This practice has also evolved and manifested into online websites, social media sites, and even formal swap shops set up by governments that provide facilities to exchange used items for other useful, pre-owned goods (Figure 1) (Jain and Gupta 2016; Anonymous 2017).

# 2.3 The practice of donating used goods

In India, items in usable condition are commonly handed down within families where the older children's used items, especially clothes, get passed on to the younger children or are given to domestic staff (Shah and Gajjar 2021). Many Indians also donate in kind to charitable institutions or hand over collected second-hand commodities in special collection drives conducted by the local governments or NGOs such as Goonj (Figure 2) (Shresth and Verma 2022; Nanath 2012). These forms of giving are non-reciprocal in nature and, most often, the giver makes the choice of recipient and also what and how much to give with no inputs from the receiver.



Figure 1: A government-organised swap shop set up in Kozhikode, Kerala<sup>6</sup> (Source: Suchitwa Mission)

<sup>&</sup>lt;sup>6</sup> In over 80 urban local bodies in Kerala, under the statewide Haritha Keralam cleanliness campaign, the government arranged swap shops that are a platform for the public to obtain clean and reusable items free of cost.





Figure 2: A 'Neki ki Deewar' set up by the government in Delhi<sup>7</sup> (Source: Anjana Nair)

# 2.4 The practice of sharing used goods

As stated by Benkler (2004), sharing of goods and services has been a prevalent 'non-reciprocal pro-social behavioural' practice. In a sharing model, available resources are allocated on a need basis within one's family or immediate social circle (Belk 2007). With globalisation and innovation in technology, sharing has expanded to sharing resources with people outside of one's immediate social circle. Social media platforms such as Facebook, WhatsApp, and Instagram have enabled the creation of localised, private groups where unutilised assets are shared between group members. Belk (2010) points out that some forums also employ a collaborative consumption model where the resource being shared can be used for a defined time period for a fee, but the ownership of the resource is retained by the original owner. Renting of one's living space through Airbnb or of furniture through Furlenco are examples of such services in India.

# 2.5 The practice of alternative giving

Liu, Johnson, and colleagues (2020) further introduce an additional framework of 'alternative giving' to distinguish and classify giving that is distinct from selling, exchanging, donating, or sharing. Selling, exchanging, or some collaborative consumption models represent a linear cycle of giving and receiving founded on reciprocal relationships with expectations of either money or goods in return. Alternative giving, by contrast, is practised without any reciprocity requirements.

<sup>7</sup>In Delhi, a new initiative by the government, 'Neki ki Deewar' involves setting up 'Walls of Kindness' along the outer boundary walls of 300 government schools to encourage 'Good Samaritan' behaviour; here people can drop off used, second-hand items.



Additionally, while donating and sharing are generally performed without compensation or reciprocity, the recipients are usually selected by the giver and are most likely family, acquaintances, or institutions or organisations that the giver is aware of. In an alternative giving model such as freecycling, strangers coordinate the transaction amongst themselves. It is also important to note that alternative giving includes ownership transfer of the resource similar to all other models except sharing.

Table 1 provides an overview of the four types of second-hand giving, including details of key characteristics, relation between the involved parties, transaction channel used, ownership status of the commodity being given, and reciprocity expectations from the giver. The table also provides Indian examples for each type that distinguishes alternative giving from other constructs, thus creating the basis to study the practice of freecycling.

Types of Exchange	Material Exchange Characteristics	Relations between Involved Parties	Transaction Channel	Ownership Status of Commodity	Reciprocity Expectation	Example
Selling	One-way material flow with monetary transaction; market-economy driven	Strangers	Online (social media and applications) and offline (in-person exchanges)	Transferred	Expect money in return	Online: OLX, Quikr, Kiabza (clothes), Offline: Raddiwala, Kabbadiwala
Exchanging	Material reciprocity; mutual agreement by all parties	Strangers	In-person exchanges, community events, online platforms	Transferred	Expect utensils in return	Offline: Bhandiwale/B artanwale Swap shops
Donating	One-way material flow; independent decision-making by giver	Familiar individuals or organisations	In-person giving	Transferred	No expectations	Donations in kind or collection drives of specific items
Sharing	Material flow is temporary for a limited time, on a need basis	Familiar individuals	Online (social media) and in-person giving	Retained	No immediate formal expectations	Sharing between neighbours or on social media groups
Alternate giving	One-way material flow; independent decision-making by giver	Strangers	Online (social media) initially followed by in-person giving	Transferred	No expectations	Freecycle.org

Table 1: Types of second-hand goods exchanges in India



A framework for the study of freecycling has been arrived at on the basis of the analysis done of various models of second-hand giving in India and studying the distinction between these models and alternative giving. Freecycling involves multiple givers and receivers, who may or may not know one another, conducting non-monetary and non-reciprocal transactions via online and in-person markets. Freecycling group participants can choose to only give, only receive, give and receive and also not give or receive but only stay as members of the groups. In Sections 2.6, the study examines the origins of the freecycling movement and presents the methodology applied to map the presence of various freecycling groups in India.

# 2.6 The freecycling network

The Freecycle Network came into existence in 2003 as a platform to help environmentally conscious consumers give away used, reusable, or unwanted items instead of discarding them. The network's official mission statement is 'to build a worldwide gifting movement that reduces waste, saves precious resources and eases the burden on our landfills while enabling our members to benefit from the strength of a larger community' (Anonymous 2022). Participating in the Freecycle Network requires signing up for a membership with a valid email address, a username, and password. Once an account has been created, members can use one of 5,000+ local online groups to advertise things that they wish to offer or to request things they want (see Figure 3).



Figure 3: Sample post seeking a used item (Source: Freecycle Network)

The Freecycle Network only mandates that requests be made for objects that are 'free, legal, and appropriate for all ages'. Members are, thus, not permitted to trade or barter or to expect any return gift, service, or payment. The posts are regulated by local volunteer moderators who are responsible for taking down posts that violate the Network's rules. The onus of protecting one's safety and privacy when posting to the list or participating in transactions lies solely with the member and the Network does not take responsibility for any unfavourable outcome.



There are 26 groups from India listed on the official website of the Freecycling Network, www.freecycle.org. These groups exist in several places, from big cities like Mumbai, Bengaluru, and Hyderabad to smaller towns like Gangtok, Chengannur, and Rohtak. The combined membership across these groups as on 31 August 2022 is 10,567 people. After observing the activities of all 26 groups from January to April 2022, it was observed that only four out of the 26 groups—Gurgaon, Mumbai, Vijayawada, and Pune—had member interactions during this period. This suggests that freecycling groups in India are concentrated only in specific urban centres. Limiting the study to participants from only these four groups on the Freecycling Network would also have resulted in a smaller sample size for the survey capturing members' profiles and motivations for participation. Therefore, the scope of the study was extended from groups on the Freecycle Network to any and all groups across various social media and offline platforms.



#### 3. RESEARCH METHODOLOGY

In order to arrive at a more comprehensive picture of freecycling activity in India, a three-phase approach was undertaken:

- 1. Phase 1 included mapping the various freecycling groups in India. The objective was to: a) arrive at an initial, non-exhaustive compilation of freecycling groups in India, both online and offline, and b) enable the selection of groups for the participant survey exercise and content analysis activity of the study. This would indicate if the movement was limited to only urban centres or extended to smaller towns and villages as well.
- 2. Phase 2 involved a participant survey of the members of select groups and an analysis of the content posted on these groups. This would help in understanding the profile of freecycling group participants and also the type of commodities that were being freecycled on the groups.
- 3. Phase 3 was a survey of practitioners in the waste management industry, ranging from founders of companies to waste workers. This was conducted to establish the intersectionality between objectives of freecycling groups with that of the waste management industry.

The six different activities undertaken during the study to meet the above objectives are outlined below:

- 1. Preliminary searches on the Internet using the keywords 'freecycling', 'free stuff', 'giveaway', 'preloved': This exercise revealed the presence of over 30 groups across India that operate on online platforms like Email, Yahoo Group, Facebook, WhatsApp, Instagram, and Telegram—in addition to the 26 on freecycle.org. This activity also brought to light a few offline initiatives like zero-waste shops and freecycling events that sometimes catered to specific items like clothes or empty containers.
- 2. Capturing the presence of any smaller, local groups through specific questions on the participant survey: Freecycling groups are location-specific and many closed or private groups also exist in India where one can gain membership by invitation only. In order to gain insights into such groups, a question was included in the participant survey asking if respondents knew of groups other than the ones they were members of.
- 3. Selecting the sample groups for participant survey and content analysis: Once the initial cataloguing of freecycling groups was done, five groups on Facebook were selected to proceed with the participant survey. In the Facebook groups, unlike groups on other platforms, it was easy to become a member and circulate the survey form. Furthermore, Facebook offered the ability to view the group's



information and posts' history that was essential to conduct the study. The selection of groups for the study were based on my own membership in one group (Goa) and my observation of the activity patterns on groups in cities with greater awareness of freecycling (Mumbai, Bengaluru, and Pune). A pan-India group was also selected to capture responses from participants across India. The selected groups were all private groups that enabled only members to be able to see other members and their posts. However, visibility of the groups is not restricted and anyone with access to Facebook can locate them. The profiles of the five selected groups are shown in Table 2.

Name of Freecycling Group	Host Platform	Total Number of Members*	Number of Administrators	Date of Formation	Monthly Post Numbers**
Free give away stuff Goa	Facebook	17,818	2 admins; 2 moderators	June 22, 2020	299
Dariya Dil Dukaan (दरिया दिल दुकान): Gift Economy Pan India ©	Facebook	13,654	2 admins; 3 moderators	July 13, 2014	93
Dariya Dil Dukaan PUNE	Facebook	690	3 admins	October 6, 2016	6
Freecycle Bangalore	Facebook	15,159	9 admins	April 3, 2012	435
Give Stuff Away for FREE (Mumbai)	Facebook	2,826	1 admin; 1 moderator	May 30, 2016	93
Total		50,147			

\* As of August 2022; \*\* For August 2022 Table 2: Profile summary of the Facebook freecycling groups selected for the study



- **4. Content analysis of transaction posts:** On the five selected groups, the available posted interactions between members were studied over a continuous two-month period per group between April and August 2022. The posts on these groups were accessible only after becoming a member of these communities. This exercise aimed to capture and explore the contents of each post including whether the posts were offering or seeking a used item and also the broad type of categories that each post could be organised under. Each listed material transaction post was first categorised under either 'offer' or 'seek'. 'Offer' posts included posts offering used or unwanted goods from givers and 'seek' posts included posts requesting for specific items by recipients. On some groups, the administrators, moderators, or recipients of items would also post sporadic messages expressing their appreciation for the existence of the group and thanking their benefactors or welcoming new group members. The posts were further catalogued into one of 13 product categories based on the item that was advertised.
- 5. Online multiple-choice participant survey: A Google Form survey was used as the medium to capture group members' attitudes, behaviour, and motivations towards pre-owned items. The study also captures insights into people's comprehension of end-of-life handling of disposed items. The survey was initially circulated on the five identified Facebook groups as a post seeking information. However, since the request did not have a specific item being given or sought, it did not follow group rules and was rejected in all five groups. The survey was then circulated on my personal social media channels (WhatsApp, Facebook, LinkedIn, and Instagram) since I work in the waste reduction sector and have access to similar thinking individuals. The survey was subsequently reshared by others within their social circle. Responses were received from group participants with or without prior experience of giving or/and receiving pre-owned goods. Although the survey was conducted post-COVID, when participants' behaviour could have changed, the survey questions did not focus specifically on post-pandemic patterns of consumption. A total of 57 responses were collected through this exercise, which is a small number considering that the total membership of the five selected groups approaches 50,000. However, only a small fraction of people actively engage in posting on the groups. The purpose of the survey was not to generalise the entire freecycling population in India, but rather to arrive at a preliminary understanding of members' attitudes, motivations, and behaviour towards participating in such groups.
- 6. One-on-one in person waste management practitioner interviews: In-person interviews were carried out with 15 waste management practitioners to obtain qualitative data on their knowledge and perception of freecycling. The selected respondents varied from waste workers to managers and founders in waste management companies that I work with. As very little is currently known about the subject within waste management, an open-ended data gathering strategy was adopted. I also reached out to workers across the waste value chain in five locations to try and obtain heterogeneous responses. Fifteen individuals, who agreed to be interviewed, shared their awareness of and responses to freecycling in India.



# 3.1 Limitations of the study

The study is exploratory in nature and presents findings based on primary research on freecycling initiatives in India, analysis of survey responses of a limited number of group members, and in-person interviews with select waste management practitioners. Due to limitations in pursuing one-on-one interactions with group moderators and participants, the methodology and data collection has relied largely on visible digital information, particularly through Facebook accounts of freecycling groups. This has significantly limited the study to accessible groups with an active online presence. The sample is also drawn based on my personal networks and is, therefore, not intended to be representative of the entire Indian freecycling landscape.

The key findings from the research activities are presented in two sections: Section 4 maps the existing landscape of freecycling groups in India and studies the profiles of members and content posted on these groups; Section 5 focuses on an analysis of the attitudes, motivations, and behaviour of group participants and waste management practitioners towards freecycling and second-hand items.



# 4. FINDINGS: OVERVIEW OF THE FREECYCLING LANDSCAPE IN INDIA

# 4.1 Mapping freecycling groups in India

Through initial Internet searches, 64 online and offline freecycling groups and events were identified across India. Post the participant survey, respondents also contributed information about 31 local groups that operated using closed, private social media platforms on WhatsApp and Telegram to transact in second-hand items. However, upon further investigation, only eight of these 31 adhered to the definition of freecycling as defined by the study. Respondents also referred to 17 groups that were not relevant to the study: groups having expectations of either monetary or material reciprocity. Since there was no way to ascertain if the remaining six groups practised freecycling, only a total of 72 groups were considered in the mapping of freecycling groups in India, as illustrated in Figure 4.



Figure 4: Map indicating the location of freecycling groups in India (Source: Author; Created on Goolge Maps)



Based on easily accessible information, the 72 groups were categorised on the basis of location, host platform, and approximate group size. The presence of freecycling groups was observed in 19 out of the 28 states of India and 2 of the 8 Union Territories. The highest number of groups was identified in the state of Maharashtra (19.4 per cent), followed by groups from Tamil Nadu and Karnataka and Delhi-NCR (8.3 per cent), as shown in Figure 5a. Groups with participants from multiple Indian states were at 9.7 per cent. As per Figure 5b, the maximum number of groups was hosted on Facebook (38.89 per cent) and on the Freecycle Network (36.11 per cent), possibly because of the ease of using these platforms. It was also interesting to note that, as per Figure 5b, freecycling was also prevalent as an activity in offline events (9.72 per cent) and many applications to facilitate such transactions are also being developed (5.56 per cent).

As indicated in Figures 5c and 5d, the membership numbers of many groups was unknown (23.6 per cent) since these are either closed or by-invitation groups. However, half the groups totalled membership between 1 and 100 people (26.4 per cent) and 101 and 500 people (25.0 per cent). The highest number of members was observed from Bengaluru (36.3 per cent), Goa (32.2 per cent), and Chennai (10.9 per cent).

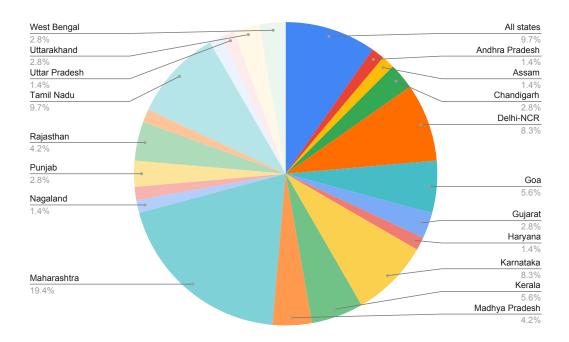


Figure 5a: Percentage of freecycling groups across the different states of India. (Source: Author)



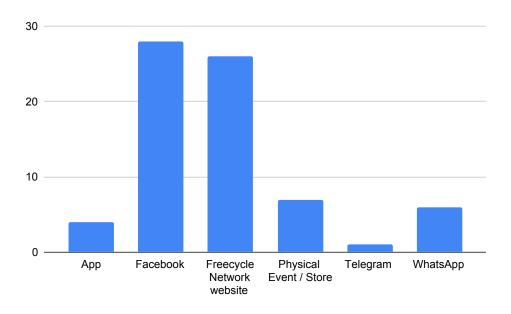


Figure 5b: Platforms on which free cycling groups are prevalent (Source: Author)

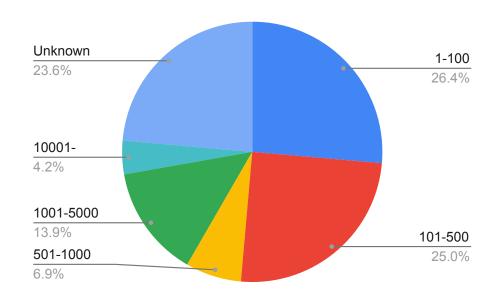


Figure 5c: Percentage of group membership range

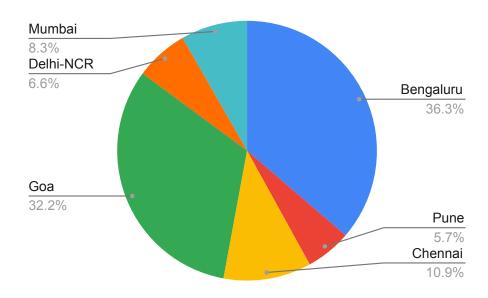


Figure 5d: Groups with the maximum number of members

The research suggests that there is a growing awareness of freecycling not just in the larger cities of India, but also in smaller states and towns (for example, Goa or Kohima). Many places also have sub-local groups that operate out of a specific location or geographical boundary (for example, Rani Meyammai Towers in MRC Nagar, Chennai, or Malleswaram Garage Sale/Barter/Freecycle). The study also brings to light that the organisational structure and rules around freecycling do not see any changes across varying group sizes. Most continue to be moderated by volunteer administrators and the members are responsible for maintaining decorum in the group.

# 4.2 Content mapping and analysis of posts

Of the 72 freecycling groups and initiatives that were mapped, five Facebook groups were selected to study the content of their posts over a two-month period. The intent of this exercise was to evaluate the category of items that were offered versus what was requested across different locations. The chosen groups were: Free give away stuff Goa; Freecycle Bangalore; Give Stuff Away for FREE (Mumbai); Dariya Dil Dukaan PUNE; and Dariya Dil Dukaan: Gift Economy Pan India. It is observed that in Goa, more items are offered (75.0 per cent) instead of requested (25.0 per cent), whereas in Mumbai, Pune, and on the pan-India group, there are more posts seeking items (62.24 per cent, 78.57 per cent, and 62.16 per cent, respectively). In Bangalore, there are 20 per cent more posts offering items. Table 3 provides an overview of the posts mapped across the five groups.



No.	Group Location	Number of members	Total Number of Posts	Total Number of Offer Posts	Total Number of Seek Posts	Total Number of Gratitude Posts	Per cent Offer Posts	Per cent Seek Posts	
1	Goa	17,818	936	702	234	0	75.00 per cent	25.00 per cent	0.00 per cent
2	Bangalore	15,159	1,001	592	406	3	59.14 per cent	40.56 per cent	0.30 per cent
3	Mumbai	2,826	143	41	89	13	28.67 per cent	62.24 per cent	9.09 per cent
4	Pune	690	14	3	11	0	21.43 per cent	78.57 per cent	0.00 per cent
5	Pan-India	13,654	148	56	92	1	37.84 per cent	62.16 per cent	0.68 per cent

Table 3: Overview of posts reviewed for content across five Facebook freecycling groups

Each of the posts was further studied and categorised based on 13 product categories that included clothes, apparel, books, and more expensive items such as electronics, furniture, and so on. Items such as musical instruments, bicycles, exercise equipment, and so on, were clubbed together under miscellaneous household items. Of the total post occurrences that were studied (n=2242), 'Clothing and apparel' were offered the most (21.38 per cent), followed by 'Office, stationery and media' (13.41 per cent) and 'Baby and children's stuff' (12.98 per cent). The latter category was equally sought (16.47 per cent); however, 'Electronics' was the most wanted category (18.03 per cent). Only 5.77 per cent of posts were seeking 'Clothing and apparel' (see Table 4).



Give Post Category	Goa	Bangalore	Mumbai	Pune	Pan-India	Total
Furniture	23	53	2	0	3	81
Electronics	72	67	11	0	4	154
Clothing and apparel	183	99	12	0	4	298
Kitchen utensils, items, and appliances	37	27	3	0	1	68
Baby and children's stuff	93	77	4	0	7	181
Office, stationery and media (books, magazines, CDs)	87	76	3	3	18	187
Crafts and DIY material	19	6	1	0	2	28
Home remodelling/Home decor	33	29	0	0	1	63
Used containers (eg. food takeaway boxes, glass bottles or jars, etc.)	15	24	0	0	1	40
Miscellaneous household items	46	65	0	0	8	119
Pets, plants, and gardening	40	22	1	0	3	66
Vouchers, e-vouchers	40	29	0	0	1	70
Medical/cosmetics	14	18	4	0	3	39
Total	702	592	41	3	56	1394

Seek Post Category	Goa	Bangalore	Mumbai	Pune	Pan-India	Total
Furniture	14	43	15	1	7	80
Electronics	34	75	16	1	24	150
Clothing and apparel	18	21	5	0	4	48
Kitchen utensils, items, and appliances	8	22	5	0	8	43
Baby and children's stuff	25	82	19	3	8	137
Office, stationery, and media (books, magazines, CDs)	53	41	6	4	6	110
Crafts and DIY material	12	6	0	0	4	22
Home remodelling/Home decor	11	8	0	0	3	22
Used containers (eg. food takeaway boxes, glass bottles or jars, etc.)	5	3	0	0	3	11
Miscellaneous household items	23	65	14	1	12	115
Pets, plants, and gardening	25	23	6	1	4	59
Vouchers, e-vouchers	4	8	0	0	3	15
Medical/ cosmetics	2	9	3	0	6	20
Total	234	406	89	11	92	832

Table 4: Summary of post occurrences across product categories



Within each group, some specific observations were made:

- In Goa, there were close to a quarter posts offering clothing and apparel (26.0 per cent), but less than one-third of that number (7.67 per cent) requested second-hand clothing. It was also noticed that people had double the requests for pets, plants, and gardening material (10.68 per cent) than what was offered (5.7 per cent).
- In Mumbai, many people requested furniture (16.85 per cent) but the number of posts offering furniture was one-fourth the request volume (4.88 per cent). And while there was a sizeable number of posts seeking miscellaneous household items (15.73 per cent), there were no givers for this category
- In the pan-India group, too, there were some obvious gaps between what was offered and what was being sought. While electronics was much sought after (26.09 per cent), most people had office stationery and media to offer (32.14 per cent).

One key observation of this exercise was that certain pre-owned items such as used containers are also being given away on freecycling groups. These would conventionally be considered as waste, but many members are hoping to find alternative uses for such products. In some posts, 'waste' items were requested with a specific description of what they would be used for (Figure 6).



Figure 6: Sample seek post for a waste item (Source: Facebook)

It was also unique for members to share valid, unwanted vouchers, e-coupons or subscriptions with others who might put them to good use. And, finally, although the overall percentage of people giving and seeking medicines and cosmetics were similar, it was alarming to notice the unsupervised transaction of these items on freecycling groups. In general, it was evident from this exercise that, in all the groups, there was a discrepancy in what members were requesting and what people were offering. This highlights the hypothesis that members' motivations for participating in the activity of freecycling is not governed by altruism. Instead, they could most likely be looking for an avenue to declutter their homes of unwanted items. The findings from the survey responses of 57 participants in freecycling groups were analysed next to better understand this.



# 4.3 Freecycling group member profiles

Most of the survey respondents had participated in both giving and receiving items (43.86 per cent) while over a quarter of them had not transacted on freecycling groups (28.07 per cent). There were more givers than receivers among the survey respondents. Of the 57, all but one respondent identified their gender. **Among them, 48 were women and eight were men. About 82.45 per cent of the survey participants were under the age of 40**. Twenty-five belonged to the age group 35–40 years while nine people each fell in the age groups 26–30, 31–35, and 41–59 years. Thirty-eight people were employed in either full- or half-time jobs and three were students. Only 27 people responded to the question on average monthly income, their answers revealed that this figure was close to INR 80,000.

Most members had heard of freecycling for the first time through social media channels (35.1 per cent) such as accounts of influencers or zero waste groups (7.0 per cent). Many respondents discovered freecycling while browsing through the Internet (15.8 per cent). Friends and family also played a part in providing knowledge of freecycling for nine respondents (see Figure 7). More than half the participants were part of at least one (n=21) or two (n=19) groups. In most households, only the respondent (n=30) or one other family member (n=10) participated in freecycling groups.

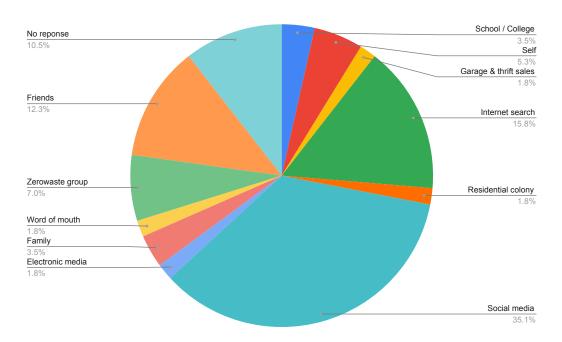


Figure 7: How participants learnt about freecycling (Source: Author)

8 Pursuing a zero-waste lifestyle is a natural first step for many consumers who are bothered by the waste problem and wish to change their consumption patterns. Groups and influencers that encourage a zero-waste lifestyle are thus often instrumental in encouraging others towards alternative consumption practices such as freecycling.



Most households purchase items like furniture, electronics, and kitchen utensils once or twice a year, whereas clothes and apparel are purchased more frequently, between 3 and 4 months a year. While most commodities continue to be purchased from local stores or neighbourhood shops, shopping on online marketplaces is prevalent when purchasing electronics (52.6 per cent) or clothing and apparel (24.56 per cent). Finally, when asked about where respondents thought their used items would end up once discarded, three responses were most common: reused by someone, recycled if recyclable, and landfilled. The next section collates the survey findings on why and how people participate in freecycling groups.



# 5. FINDINGS: ATTITUDES, MOTIVATIONS AND BEHAVIOUR OF FREECYCLING GROUP MEMBERS

# 5.1 Behaviour patterns with used items prior to joining the freecycling group

- The most common disposal method of second-hand items for participants was selling to a second-hand items collector or scrap dealer, with furniture (38.10 per cent) and kitchen appliances (28.57 per cent) being the preferred items to be disposed of in this manner.
- However, while most respondents (96.55 per cent) have received second-hand goods at least once in their lives, the common avenues of receiving pre-owned items were hand-me-downs from immediate or extended family members, neighbours, friends, colleagues, or acquaintances.
- Receiving from second-hand goods collectors was second-to-last of the practices
  of receiving used items, with online platforms being the last.
- Online marketplaces were preferred only for sale of used electronics.
- Among all item categories of charitable giving, clothes (38.10 per cent), baby and children's stuff (26.19 per cent), and reusable medical equipment (33.33 per cent) had the largest number of posts.
- Some participants also dumped or trashed most second-hand items other than used furniture and clothes.

# 5.2 Motivations of joining freecycling groups

The analysis of survey responses provided evidence of members' motivations for joining freecycling groups. This question was kept open-ended with no selection options provided. This was done so that the different reasons that people stated could be analysed and categorised into common themes. Ten primary motivations emerged from the analysis:

- a) To save resources (12.28 per cent)
- b) To declutter one's home (5.26 per cent)
- c) To reduce (landfill) waste (19.30 per cent)
- d) To enable reuse by someone (21.05 per cent)
- e) To live with less possessions (5.26 per cent)
- f) To revive traditional ways of living (7.02 per cent)
- g) To live sustainably (12.28 per cent)
- h) To share with others (8.77 per cent)
- i) Personal experience of receiving (something) in times of need (5.26 per cent)
- j) To save money (3.51 per cent)



It was observed that while some respondents joined freecycling groups to support the movement's original intention of saving resources, decluttering one's home and also reducing landfill waste, many were encouraged by the idea that their waste could be of use to someone. Some members were also keen on furthering broader goals such as living sustainably, with fewer possessions, and also to revive what was once the way of life. And while altruistic motivations of wanting to share with others was indicated, people's personal experience and utilitarian need of wanting to save money were also reasons for joining freecycling groups.

# 5.3 Giving and receiving patterns on freecycling groups

When posts for items result in more than one respondent, the primary determinant of selecting the recipient is a first-come-first-served basis and, secondly, if the recipient is someone in need. Each respondent's frequency of giving and receiving used items was limited to once or twice a year across the various item categories. Baby and children's stuff and pets, plants, and gardening stuff were the only categories that were exchanged more frequently (every two-three months).

In Table 5, the reasons for people giving and receiving pre-owned items in the group are ranked and compared against the motivations for people to participate in these groups as captured in Section 5.2. It is interesting to note that respondents' primary motives for giving pre-owned items are centred around decluttering and consuming less, but receivers are thinking more in terms of personal and environmental benefits.

Rank	Why People Give	Why People Receive	Motivations for Participating
1	I am trying to reduce my consumption and lead a minimalist lifestyle.	I want to reduce the number of items ending up as waste.	To enable reuse by someone.
2	I want to get rid of items I don't use anymore (declutter my home).	I am trying to reduce my purchases.	To reduce (landfill) waste.
3	I want to reduce the number of items ending up as waste.	I enjoy creatively recycling used, unwanted objects.	To save resources and to live sustainably.
4	I like the idea of giving with no reciprocal expectations	I like the idea of receiving with no monetary expectations.	To share with others.
5	I want to help others who are in need.	I want to help others who are in need.	To revive traditional ways of living.

Table 5: Comparison of the reasons why people give and receive vs. their original motivations of joining the group



As freecycling involves transactions between strangers, the survey also captured what other aspects are considered while participating in a give-or-receive transaction. It was found that givers are more likely to be careful about safety and personal information sharing. Providing limited personal information and meeting at public places were mechanisms by which givers assured that there was some level of safety maintained. Some even conducted background checks on the receivers and ensured that they were accompanied by one other person at the time of meeting. On the receiver's side, more than half of the respondents had never thought about these concerns. Thirtyfive percent per cent of the respondents also shared that through these freecycling groups, they had built friendships with other group members. One of the survey participants shared how their six-year-old child had loved the way the 20-somethingyear-old giver had maintained their toys. Another participant was thankful to a few fellow freecycle group ladies who had helped her during pregnancy. This sense of community that these groups encourage between like-minded people also has the potential to develop into action as illustrated by a participant who is regularly discussing social issues that can be tackled with fellow group members.

# 5.4 Patterns of non-participative group members in freecycling groups

Most respondents who answered the survey had either participated by way of giving or receiving or both giving and receiving pre-owned items. Of the 57 participants, around 30 per cent were members of their respective groups, but had never given or received any item. The biggest concerns among these participants were about the hygiene and quality of items posted on the group. The items were perceived to be damaged or not in a usable condition and factors like size, fit, and colour suitability were cited as reasons for not participating. Some people also mentioned that the effort required for coordinating the pick-up and their distrust of strangers prevented them from participating. Close to 70 per cent were willing to consider transacting if their concerns were addressed and the first category that they would be comfortable transacting in with was stuff related to pets, plants, or gardening, followed by miscellaneous items like bicycle, musical instruments, etc. Clothing and apparel and children's stuff were their least preferred items for induction into the world of freecycling.



# 5.5 Waste management practitioners perception of freecycling

The motivations identified in the survey of freecycling group members were further investigated by conducting in-person surveys with waste management practitioners from the same geographies where the participant surveys were conducted. This was done to understand the perceptions of stakeholders in the waste management sector towards the presence of freecycling groups in their respective geographies. And to evaluate if this initiative is perceived as a solution towards the growing waste management problem or viewed as a threat to the subsistence of waste workers.

A total of 15 people were interviewed: 10 were managers or operational employees at waste management facilities and five were waste workers. It was easy for me to access these personnel through my professional work experience in waste management. More than half of the interviewees (66.67 per cent) had not heard of the concept of freecycling prior to the interview. Eighty per cent of respondents did not know that freecycling groups existed in their cities. However, they were eager to participate in these groups. The 12 participants who were keen on engaging had a range of reasons for justifying the need for such groups. These reasons ranged from benefiting someone in need, the environmental impact of lesser waste, and reusing resources. Barring one respondent, none of the interviewees felt that freecycling in any way conflicted with their livelihood and work.

The results from the participant and waste management practitioner surveys were further investigated through a content analysis of the members' posts on selected social media groups. This exercise demonstrated that there is a discrepancy between what members were requesting and what people were offering on the groups. In spite of this discrepancy, most offered items were taken by someone in the group, thus demonstrating that participants' motivations are more varied than initial research revealed and can be driven primarily by utilitarian needs and considerations of personal savings. Waste management practitioners who were asked what category of items people should not give to freecycling groups responded that non-working electronics, reusable medical equipment, and broken furniture should always be handed over to authorised collectors as these require expertise to manage if deemed as waste.



#### 6. DISCUSSION AND CONCLUSION

Freecycling has evolved from consumer-to-consumer-led transactions on private groups to a model that is studied by both business entrepreneurs and researchers. While India has a robust tradition of reuse, freecycling stands out from conventional second-hand giving models prevalent in India or profit-making sharing models by encouraging anonymous participants to give through a platform rather than donate or throw away things. This provides people who have usable products, but have no use for them, with an avenue for environmentally friendly disposal. This research, thus, establishes a framework to distinguish this phenomenon from other second-hand giving models. The conceptual differentiation of freecycling is its distinction of being a non-monetary and non-reciprocal exchange of pre-owned commodities among strangers that allows participants the choice to give, receive, give and receive, or simply remain as non-participative members on the group.

In addition to this framework, the research also uncovers key observations on the profile of freecycling participants in India and the motivations that drive their involvement in the group. Prior research on the subject has mostly been carried out outside of India and the motivations vary between participants being less materialistic to pro-environment to entirely altruistic in nature. In line with the available literature on this subject, freecycling members' fundamental motivations for participation were examined through this study. This revealed that while many members were involved in such groups to further the initial objectives of saving resources, reducing waste, and decluttering homes, many found freecycling to be an avenue for sharing and transitioning to a less consumerist lifestyle and also a way to save money.

The study suggests that those who seek to undertake additional research on the subject of members' motivations should focus on utilitarian needs such as saving money, reducing quantity of possessions, anti-consumption, or even accruing an item on a need-basis. As the timeframe for this study was limited, questions that explore the association between moral or pro-social or pro-environmental consumption and self-orientation as against selflessness towards others were not explored. The findings of this research could be strengthened through observations, interviews, and online content analysis of online and offline groups and events in smaller cities and towns of India. Since this research was also limited to studying groups that operated on Facebook, the observations are limited to the methods employed on this platform. For a holistic understanding of the landscape of freecycling in India, the positive attributes and challenges of various social media platforms and in-person engagements would have to be evaluated. It might also be valuable in future research to collect survey data directly from willing participants instead of circulating the link on social media channels. These surveys could also consider how sustainable consumption activities such as freecycling contribute to general health and well-being of people or community development.



Finally, although this research uncovered many government-led initiatives that are developed around the concept of giving with 'no strings attached', it does not provide any insight into how policymakers, entrepreneurs, or even organisers and administrators of freecycling groups can work collaboratively to satisfy basic participant needs. Such research can prompt the creation of more localised initiatives, encourage innovative reuse models that include all stakeholders and create avenues for start-ups to follow suit. India is estimated to generate close to 31 million tonnes of landfill waste annually, according to the Ministry of Environment, Forest and Climate Change (Tewari n.d.). So, expanding freecycling communities and engaging people in alternative giving practices can act as a lever to reduce waste production. The idea for this study stemmed from the author's professional and personal experience as a waste management consultant with the intent that the research may open avenues and dialogue around the impact of consumer-driven practices on society, waste, and public policy. To enable a just circular economy model, it is vital that stakeholders who directly and indirectly participate in similar models are aware of their long-term life cycle impacts.



### 7. APPENDIX

# A. Survey form used for participant survey

Main Respondent: Active or Ex-Member of Indian Freecycling Communities

Objective: To understand the consumer behaviour and motives for participating in a

Freecycling Ecosystem

Survey Type: Online Survey Form

Survey Date: Survey Time:

Section A: Demographic Profile

Objective: Who are the participants in Indian Freecycling Groups?

1. Name

2. Gender Male

Female

Prefer not to say

3. City of Residence

4. Age Group Below 20 years (Select one) 21–25 years

26–30 years 31–35 years 35–40 years 41–59 years

60+

5. Occupation Student (Select one) Professional

Entrepreneur Homemaker

Full-time employed Part-time employed

6. Household monthly income\* (would be helpful for the research but optional)



### Answer Questions 7, 8 & 9 for the following items:

- a. Furniture
- b. Electronics
- c. Clothing, cosmetics and apparel
- d. Kitchen utensils, items &/or appliances
- e. Baby and children's stuff
- f. Office, stationery &/or media (books, magazines, CDs)
- g. Crafts and DIY material
- h. Home upholstery, remodelling &/or decor
- i. Used containers (eg. Food takeaway boxes, glass bottles or jars, etc)
- j. Pets, Plants &/or Gardening Stuff
- k. Other Household items (eg. cycle, musical instruments, etc)
- I. Reusable Medical Equipment (eg. crutches, wheelchair, etc. not medicines)
- 7. What is your household's frequency of purchasing the above/following items:
  - Once a week
  - 2–3 times a month
  - Once a month
  - Once in 2–3 months
  - 1–2 times a year
  - Not Applicable
- 8. How much on average is spent on purchasing the above/following household items in a year:
  - Less than Rs.1000
  - Rs.1001–2500
  - Rs. 2501–4500
  - Rs. 4501–9000
  - Rs. 9001–15000
  - Above Rs. 15000
- 9. What are the type of stores from where purchases of the above/following household items are generally made:
  - Local stores and markets (neighbourhood shops)
  - Second-hand thrift shops
  - Supermarket segment (eg. Big Bazaar)
  - Online Marketplace (eg. Amazon, Flipkart, Myntra, etc.)
  - Premium Stores (eg. Croma, Shoppers Stop)
- 10. What do you think happens when the items listed in Q 7, 8 & 9 leave your household as waste?
- 11. How did you first hear of freecycling?
- 12. How many freecycling groups/networks are you part of? Please list the names of the groups.



13. How many members in your household are members of any freecyling groups?

- Only Me
- Other Member (Specify Number)
- 14. What motivated you to join the freecycling group?

15.a. Have you ever given anything in a freecycling community

Yes ---> Direct to Section B

No ---> Direct to Question 15 b

b. Have you ever received anything in a freecycling community

Yes ---> Direct to Section C

No ---> Direct to Section D

(those who selected "Yes" in Q.15a will be directed here)

Section B: Your Experience of Giving Pre-Owned Items

Objective: Why and how do the givers participate in freecycling groups?

Answer Questions 16 & 17 for the following items:

- a. Furniture
- b. Electronics
- c. Clothing, cosmetics and apparel
- d. Kitchen utensils, items &/or appliances
- e. Baby and children's stuff
- f. Office, stationery &/or media (books, magazines, CDs)
- g. Crafts and DIY material
- h. Home upholstery, remodelling &/or decor
- i. Used containers (eg. Food takeaway boxes, glass bottles or jars, etc)
- j. Pets, Plants &/or Gardening Stuff
- k. Other Household items (eg. cycle, musical instruments, etc)
- I. Reusable Medical Equipment (eg. crutches, wheelchair, etc. not medicines)

16. Prior to joining the freecycling group, what would you usually do with the following pre-owned items:

- Sell to a second-hand collector/ crap dealer (raddiwala/kabadiwala)
- Sell on an online second-hand marketplace (eg. OLX)
- Barter with a second-hand collector in exchange for other items
- Give to the municipal or village waste collector
- Give to a second-hand collector / scrap dealer (raddiwala/kabadiwala)
- Give to charitable organisations who are collecting specific items
- Give to other family, friends or relatives (not through freecycling networks)
- Hoard or store or repurpose at home
- Dump or throw



17. How frequently do you give the following pre-owned household items on the freecycling platform:

- Once a week
- 2–3 times a month
- Once a month
- Once in 2–3 months
- 1–2 times a year
- Not Applicable

18. Why do you give or why have you given your pre-owned items to the freecycling groups? (*State more than one reason, if applicable*)

- I want to get rid of items I don't use anymore (declutter my home)
- I like the idea of giving with no reciprocal expectations
- I am trying to reduce my consumption and lead a minimalist lifestyle
- I want to help others who are in need
- I don't have access to waste collectors or second hand buyers
- I am/was relocating
- I want to reduce the number of items ending up as waste

19. If you receive many requests for an item that you have posted, how do you choose the recipient?

20. Have you thought about safety while conducting these transactions? If yes, what measures?

21. Are there any relationships and friendships that you have built over time among group members?

(those who selected "Yes" in Q.15b will be directed here)

Section C: Your Experience of Receiving Pre-Owned Items
Objective: Why and how do the receivers participate in freecycling groups?

- 22. Prior to joining the freecycling group, have you ever received pre-owned items:
  - Yes
  - No
- a. If Yes, what was the source of receiving / purchase?
  - Sibling or Immediate family hand me downs
  - Extended family or neighbours'
  - Friends, Colleagues or Acquaintances
  - Secondhand Collectors
  - Thrift Stores
  - Online Platforms
  - Not Applicable



### Answer Question 23 for the following items:

- a. Furniture
- b. Electronics
- c. Clothing, cosmetics and apparel
- d. Kitchen utensils, items &/or appliances
- e. Baby and children's stuff
- f. Office, stationery &/or media (books, magazines, CDs)
- g. Crafts and DIY material
- h. Home upholstery, remodelling &/or decor
- i. Used containers (eg. Food takeaway boxes, glass bottles or jars, etc)
- j. Pets, Plants &/or Gardening Stuff
- k. Other Household items (eg. cycle, musical instruments, etc)
- I. Reusable Medical Equipment (eg. crutches, wheelchair, etc. not medicines)
- 23. How frequently do you find yourself receiving the following pre-owned household items on the freecycling platform:
  - Once a week
  - Once a month
  - Twice thrice a month
  - Every 3 4 months
  - Once twice a year
  - Never Received this Item / Not Applicable
- 24. Why do you receive or why have you received pre-owned items on the freecycling groups? (Select more than one reason if applicable. If your reason is not captured in the options, please list it under Other)
  - I like the idea of receiving with no monetary expectations
  - I am trying to reduce my purchases
  - I enjoy creatively recycling used, unwanted objects
  - I want to help others who are in need
  - I don't have access to waste collectors or second hand buyers
  - I am/was relocating temporarily and do not want to invest
  - I want to reduce the number of items ending up as waste
  - Other
- 25. What would you/do you do with the pre-owned items you have received from freecycling groups after you are done using them?
  - Give away to someone who can still use it on the freecycle/online groups
  - Give away to someone who can still use it on offline groups
  - Throw away with waste
  - Reuse or Repurpose it
  - Send it for recycling or for correct disposal
  - Sell it to waste collectors or on secondhand platforms



- 26. Do you consider aspects like safety and personal information sharing while conducting these transactions? If yes, what measures do you take to ensure the same? (If you have already responded to this question in the earlier section, please indicate "Not Applicable or NA" as your answer).
- 27. Are there any relationships & friendships that you have built over time with other group members? If yes, could you share some memorable moments? (If you have already responded to this question in the earlier section, please indicate "Not Applicable or NA" as your answer)

(those who selected "No" in Q.15b will be directed here)

Section D: Your Experience of being a non-participative member of freecycling group Objective: Why and how do the non-participants remain members in freecycling groups?

28. Which of the following holds you back from transacting pre-owned items? (Select more than one reason if applicable. If your reason is not captured in the options, please list it under Other)

- Items might be damaged or not in good condition
- Items are not new or not "look" new
- Hygiene concerns
- Factors like Size, Fit, Colour Suitability
- I am not convinced as to why people would want secondhand items
- It feels like a lot of effort to coordinate easier to pick up from a shop
- I don't trust strangers
- Other

29. Would you be interested in transacting pre-owned items if the issues marked in the previous question are addressed?

- Yes
- No
- Maybe

30. Which of the following pre-owned items are you most likely to transact in first?

- 1. Furniture
- 2. Electronics
- 3. Clothing, cosmetics and apparel
- 4. Kitchen utensils, items &/or appliances
- 5. Baby and children's stuff
- 6. Office, stationery &/or media (books, magazines, CDs)
- 7. Crafts and DIY material
- 8. Home upholstery, remodelling &/or decor
- 9. Used containers (eg. Food takeaway boxes, glass bottles or jars, etc)
- 10. Pets, Plants &/or Gardening Stuff
- 11. Other Household items (eg. cycle, musical instruments, etc)
- 12. Reusable Medical Equipment (eg. crutches, wheelchair, etc. not medicines)



# B. Interview Questionnaire used in Person Interviews of Waste Management Practitioners

Main Respondent: Waste Workers (formal/semi-formal/informal)

Objective: To understand their awareness of and response to the freecycling

movement in their city

Survey Type: In person Interviews/online surveys

Survey Date: Survey Time:

- 1. Name
- 2. Gender Male

Female

Prefer not to say

- 3. City of Residence
  - a. Place of Origin (City/Town/Village & State)

4. Age Group Below 20 years (Select one) 21–25 years

26–30 years 31–35 years 35–40 years 41–59 years

60+

- 5. What is the highest level of education you have completed?
  - Not attended any formal education system
  - Pre-primary
  - Primary
  - · Secondary or post-primary, vocational
  - College level or higher
  - Other
- 6. Household monthly income\* (would be helpful for the research but optional)
  - Yes
  - No
  - Other
- 7. How many people live in your household?
- 8. What would the average Monthly income of your household be\* (would be helpful for the research but optional)



- 10. How long have you been doing this work?
- 11. What type of waste material do you collect or manage?
- 12. How many kilograms of recyclable waste materials do you collect or manage on a weekly basis?
- 13. What do you do with the collected or managed waste?
- 14. Do you own a smartphone?
  - Yes
  - No.
  - Other
- a. Do you use social media on your phone?
  - Yes
  - No
  - Other
- 15. Have you heard about 'freecycling'?
  - Yes
  - No
  - Other

If the respondent has not heard of this initiative, kindly take 2 minutes to explain to them that there are online and offline communities/groups where people give their used or preowned things (sometimes broken) to others. The recipients in most cases are not known to the givers and there is no monetary or barter transaction that takes place. People give things that they have no use to someone who might have a use for it.

- 16. What is your opinion of this initiative?
- 17. Did you know that such a group exists in your city?
  - Yes
  - No
  - Other
- 18. Would you participate in such a group? If no (or Other), please capture the reason in the next question.
  - Yes
  - No
  - Other



- a. Kindly indicate the reason for the answer to the previous question.
- 19. Do you feel that the presence of such a group conflicts with your work? Specify an answer with reason.
- 20. What, according to you, are the items that people **should not give out for free?** Select as many options as applicable. Interviewer may have to read each option individually.
  - Furniture
  - Electronics
  - Clothing, cosmetics and apparel
  - Kitchen utensils, items &/or appliances
  - Baby and children's stuff
  - Office, stationery &/or media (books, magazines, CDs)
  - Crafts and DIY material
  - Home upholstery, remodelling &/or decor
  - Used containers (eg. Food takeaway boxes, glass bottles or jars, etc)
  - Pets, Plants &/or Gardening Stuff
  - Other Household items (eg. cycle, musical instruments, etc)
  - Reusable Medical Equipment (eg. crutches, wheelchair, etc. not medicines)



## C. List of 72 freecycling groups in India

S.No.	Group Name	Location	State/Union Territory	Host Platform	Approximate Member Size	Privacy Type
1	Gangtok India	Gangtok	Sikkim	Freecycle Network website	2	Accessible to anyone
2	Chengannur India	Chengannur	Kerala	Freecycle Network website	66	Accessible to anyone
3	Chandigarh India	Chandigarh	Chandigarh	Freecycle Network website	154	Accessible to anyone
4	Kohima	Kohima	Nagaland	Freecycle Network website	9	Accessible to anyone
5	Delhi	Delhi	Delhi	Freecycle Network website	2002	Accessible to anyone
6	Bangalore	Bengaluru	Karnataka	Freecycle Network website	1861	Accessible to anyone
7	Hyderabad	Hyderabad	Telegana	Freecycle Network website	534	Accessible to anyone
8	Gurgaon	Gurgaon	Haryana	Freecycle Network website	293	Accessible to anyone
9	Jalandhar	Jalandhar	Punjab	Freecycle Network website	89	Accessible to anyone
10	Mumbai	Mumbai	Maharashtra	Freecycle Network website	1801	Accessible to anyone
11	Jaipur	Jaipur	Rajasthan	Freecycle Network website	208	Accessible to anyone
12	Vijayawada	Vijayawada	Andhra Pradesh	Freecycle Network website	166	Accessible to anyone
13	Chennai	Chennai	Tamil Nadu	Freecycle Network website	1036	Accessible to anyone
14	Panaji	Panaji	Goa	Freecycle Network website	114	Accessible to anyone
15	Lucknow	Lucknow	Uttar Pradesh	Freecycle Network website	235	Accessible to anyone
16	Pune	Pune	Maharashtra	Freecycle Network website	486	Accessible to anyone

17	Ahmedabad	Ahmedabad	Gujarat	Freecycle Network website	437	Accessible to
18	Coimbatore North	Coimbatore	Tamil Nadu	Freecycle Network website	167	Accessible to anyone
19	Ludhiana Punjab	Ludhiana	Punjab	Freecycle Network website	77	Accessible to anyone
20	Cochin Kerala	Kochi	Kerala	Freecycle Network website	365	Accessible to anyone
21	New Town Kolkata	Kolkata	West Bengal	Freecycle Network website	267	Accessible to anyone
22	Bhubaneshwar	Bhubhaneshwar	Odisha	Freecycle Network website	74	Accessible to anyone
23	Faridabad	Faridabad	Haryana	Freecycle Network website	51	Accessible to anyone
24	Vadodara North	Vadodara	Gujarat	Freecycle Network website	34	Accessible to anyone
25	Rohtak	Rohtak	Haryana	Freecycle Network website	15	Accessible to anyone
26	Guwahati	Guwahati	Assam	Freecycle Network website	24	Accessible to anyone
27	Free give away stuff Goa	Goa	Goa	Facebook	17,818	Accessible to anyone
28	Dariya Dil Dukaan (दरिया दिल दुकान): Gift Economy Pan India ©	India	All states	Facebook	13,654	Accessible to anyone
29	Dariya Dil Dukaan PUNE	Pune	Maharashtra	Facebook	690	Accessible to anyone
30	Freecycle Bangalore	Bengaluru	Karnataka	Facebook	15,159	Accessible to anyone
31	Give Stuff Away for FREE (Mumbai)	Mumbai	Maharashtra	Facebook	2,826	Accessible to anyone
32	Pune Freecycle Groups	Pune	Maharashtra	Telegram	2000	By invitiation
33	Rani Meyammai Towers in MRC Nagar	Chennai	Tamil Nadu	Physical Event	Unknown	For residents
34	Dariya Dil Dukaan (दरिया दिल दुकान): Gift Economy : Delhi NCR	Delhi NCR	Delhi	Facebook	1696	Accessible to anyone



35	Dariya Dil Dukaan (दरिया दिल दुकान): Gift Economy Pan India	India	All states	Facebook	596	Accessible to anyone
36	Goa Dariya Dil Dukaan: Gift Economy	Goa	Goa	Facebook	198	Accessible to anyone
37	Dariya dil dukaan bangalore	Bengaluru	Karnataka	Facebook	172	Accessible to anyone
38	Dariya Dil Dukaan- Jaipur Chapter	Jaipur	Rajasthan	Facebook	464	Accessible to anyone
39	dariya dil dukaan (दरिया दिल दुकान): gift economy pan india M.P. chapter	Madhya Pradesh	Madhya Pradesh	Facebook	331	Accessible to anyone
40	Dariya Dil Dukaan (दरिया दिल दुकान): Chandigarh	Chandigarh	Chandigarh	Facebook	234	Accessible to anyone
41	Dariya Dil Dukaan - Chennai	Chennai	Tamil Nadu	Facebook	22	Accessible to anyone
42	Dariya Dil Dukaan Bhopal	Bhopal	Madhya Pradesh	Facebook	40	Accessible to anyone
43	Dariya Dil Dukaan, Nagpur	Nagpur	Maharashtra	Facebook	52	Accessible to anyone
44	Dariya Dil Dukaan (दरिया दिल दुकान): Neki ki Dukaan Gift Economy Indore	Indore	Madhya Pradesh	Facebook	5	Accessible to anyone
45	Dil Dariya Dukaan Jaipur	Jaipur	Rajasthan	Facebook	4	Accessible to anyone
46	Dariya Dil Dukaan (दरिया दिल दुकान) : Gift	Dehradun	Uttarakhand	Facebook	11	Accessible to anyone
47	Dariya Dil Dukaan (Indirapuram & Vaishali Chapter)	Indirapuram	Delhi	Facebook	23	Accessible to anyone
48	Dariya Dil Dukaan (दरिया दिल दुकान):Gift Economy-Thane	Thane	Maharashtra	Facebook	11	Accessible to anyone
49	Dariya Dil Dukaan (दरिया दिल दुकान): Gift Economy Roorkee Chapter	Roorkee	Uttarakhand	Facebook	15	Accessible to anyone



50	Dariya Dil Dukan Kolkata	Kolkata	West Bengal	Facebook	117	Accessible to anyone
51	BruDF (Barter Recycle Upcycle Downcycle Freecycle)	Bengaluru	Karnataka	Facebook	2576	Accessible to anyone
52	Freecycle Trivandrum	Trivandrum	Kerala	Facebook	1300	Accessible to anyone
53	FreeCycle Chennai	Chennai	Tamil Nadu	Facebook	101	Accessible to anyone
54	Malleswaram - Garage sale / Barter/ Freecycle	Bengaluru	Karnataka	Facebook	536	Accessible to anyone
55	The Free Store, Thane	Thane	Maharashtra	Physical Store / Facebook	964	Accessible to anyone
56	Freecycle Chennai	Chennai	Tamil Nadu	Facebook	4956	Accessible to anyone
57	Swap Shops	Kerala	Kerala	Physical Store	Unknown	Accessible to anyone
58	Eco-Indian store at Dr.Ranga Road	Mylapore	Tamil Nadu	Physical Store	Unknown	Accessible to anyone
59	DonatelT	India	India	Арр	Unknown	Accessible to anyone
60	Big Banyan	India	India	Арр	Unknown	Accessible to anyone
61	Pass it on	India	India	Арр	Unknown	Accessible to anyone
62	Trashnothing	India	India	App	Unknown	Accessible to anyone
63	Sale Swap Takeaway	Goa	Goa	Physical Events	Unknown	Accessible to anyone
64	Dariya Dil Dukaan	India	India	Physical Events	Unknown	Accessible to anyone
65	A-Z preloved items	Mumbai	Maharashtra	WhatsApp	Unknown	By invitation
66	Sustainability lifestyle	Mumbai	Maharashtra	WhatsApp	Unknown	By invitation
67	Cherished possessions	Pune	Maharashtra	Facebook	Unknown	Accessible to anyone
68	Recycling group	Pune	Maharashtra	WhatsApp	Unknown	By invitation



69	Swachagraha	Bengaluru	Karnataka	Physical Space	Unknown	Accessible to
						anyone
70	Goodwill India	Pune	Maharashtra	WhatsApp	Unknown	By invitation
71	Let's DeKlutter	Delhi-NCR	Delhi	WhatsApp	Unknown	By invitation
72	Less waste Practitioners	Mumbai	Maharashtra	WhatsApp	Unknown	By invitation



### 8. REFERENCES

Anonymous. "Freecycle: Front Door'.' Freecycle.org. Accessed September 30, 2022. Available at https://www.freecycle.org/pages/about#History per cent20and per cent20Background per cent20Information.

Anonymous. 'Swap Shop Opens in Kozhikode'. Deccan Chronicle, December 7, 2017. Available at https://www.deccanchronicle.com/lifestyle/viral-and-trending/071217/swap-shop-opens-in-kozhikode.html.

Albinsson, Pia A., and B. Yasanthi Perera. 2009. 'From Trash to Treasure and beyond: The Meaning of Voluntary Disposition'. *Journal of Consumer Behaviour* 8, no. 6: 340–53. doi:10.1002/cb.301.

Albinsson, Pia A., and B. Yasanthi Perera. 2012. 'Alternative Marketplaces in the 21st Century: Building Community through Sharing Events'. *Journal of Consumer Behaviour* 11, no. 4: 303–15. doi:10.1002/cb.1389.

Aptekar, Sofya. 2016. 'Gifts among Strangers: The Social Organization of Freecycle Giving'. *Social Problems* 63, no.2: 266–83. https://doi.org/10.1093/socpro/spw005.

Bapat, Dipti. 2016. 'The Waghri Community: Urban India's Invisible Recyclers.' *The Wire*, 30 July. Accessed February 9, 2022. Available at https://thewire.in/politics/waghri-and-chindhiwaali-workers.

Belk, Russell. 2007. 'Why Not Share Rather than Own?' *The Annals of the American Academy of Political and Social Science* 611, no. 1: 126–40. doi:10.1177/0002716206298483.

Belk, Russell. 2010. 'Sharing: Table 1.' *The Journal of Consumer Research* 36, no. 5: 715–34. doi:10.1086/612649.

Belk, Russell. 2014. 'You Are What You Can Access: Sharing and Collaborative Consumption Online.' *Journal of Business Research* 67, no. 8: 1595–1600. doi:10.1016/j. jbusres.2013.10.001.

Benkler, Yochai. 2004. 'Sharing Nicely: On Shareable Goods and the Emergence of Sharing as a Modality of Economic Production.' *The Yale Law Journal* 114, no. 2: 273. doi:10.2307/4135731.

Bora, Garima. 2021. 'Thrift Shop: From Furniture to Cars, India's Second-Hand Market Found Its Shining Moment in the Pandemic.' *Economic Times*, March 3, 2021. https://economictimes.indiatimes.com/small-biz/sme-sector/thrift-shop-from-furniture-to-cars-indias-second-hand-market-found-its-shining-moment-in-the-pandemic/articleshow/81303775.cms?from=mdr.

Botsman, Rachel, and Roo Rogers. 2010. *What's Mine Is Yours: The Rise of Collaborative Consumption*. New York, NY: Collins Business.



Foundation, Ellen MacArthur. ellenmacarthurfoundation.org. 'An Economic and Business Rationale for an Accelerated Transition.' Accessed June 23, 2022. https://ellenmacarthurfoundation.org/towards-the-circular-economy-vol-1-an-economic-and-business-rationale-for-an.

Foundation, Ellen MacArthur. Mckinsey.com. 'Towards the Circular Economy. Opportunities for the consumer goods sector'. Accessed June 28, 2022. https://www.mckinsey.com/~/media/mckinsey/dotcom/client\_service/sustainability/pdfs/towards\_the\_circular\_economy.ashx.

G. Radha, scrapregister.com. 'Recycling in India: A Revenue Generating Business Model.' Accessed September 5, 2022. http://www.scrapregister.com/news/168/recycling-in-india-a-revenue-generating-business-model. Gansky, Lisa. 2010. The Mesh: Why the Future of Business Is Sharing. Portfolio Penguin, New York, N.Y., 2010

Jain, Prerna, and Charu Gupta. 2016. 'Textile Recycling Practices in India: A Review.' *Tjprc.org.* http://www.tjprc.org/publishpapers/2-29-1479968376-3. per cent20Textile per cent20- per cent20IJTFT-TEXTILE per cent20RECYCLING per cent20PRACTICES per cent20IN per cent20INDIA per cent20A per cent20REVIEW.pdf.

Karelia, Gopi. 2019. 'Earn Money from Your Scrap: 5 Online Kabadiwalas That Have Doorstep Service.' *The Better India*, May 7. https://www.thebetterindia.com/181221/lifestyle-online-kabadiwala-pickup-service-scrap-waste-startup-india/.

Liu, Fan, Zachary Johnson, Carolyn Massiah, and Tina M. Lowrey. 2020. 'Nonmonetary and Nonreciprocal Freecycling: Motivations for Participating in Online Alternative Giving Communities.' *Journal of Consumer Behaviour* 19, no. 4: 339–50. doi:10.1002/cb.1810.

Nahata, Pallavi. 2021. 'Keep Calm and Buy Second Hand: The Guide to Post-Pandemic Shopping.' *BQ Prime*, September 21. Available at https://www.bqprime.com/business/keep-calm-and-buy-second-hand-the-guide-to-post-pandemic-shopping.

Nanath, Krishnadas. 2012. GOONJ: The Power of Cloth. *Emerald Emerging Market Case Study Journal* 1: 1–24. 10.1108/20450621111201275.

Shah, Priyal, and Chirag Gajjar. 'Secondhand Shopping: Understanding Consumer Behavior toward Pre-Owned Clothing in India.' *World Resources Institute*, 2021. doi:10.46830/wripn.20.00035

Shresth, Swati and Verma, Shaivya. 2022. 'How India Gives. 2020-21.' *Centre for Social Impact and Philanthropy, 2022.* 

Tewari, Shailshree. 'Why India's Solid Waste Management System Needs a Digital Overhaul.' *Org.In*. Accessed October 3, 2022. https://www.downtoearth.org.in/blog/waste/why-india-s-solid-waste-management-system-needs-a-digital-overhaul-75671.

Weforum.org. 'Future of Consumption in Fast-Growth Consumer Markets: INDIA.' Accessed July 28, 2022. https://www3.weforum.org/docs/WEF\_Future\_of\_Consumption\_Fast-Growth\_Consumers\_markets\_India\_report\_2019.pdf.

