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Shri Dharmasthala Manjunatheshwara Institute for Management Development, Mysuru, India
10th International Conference on
Economic Growth and Sustainable Development: Emerging Trends – November 27-28, 2025

Consumer Behaviour & The Three R's In Rural Areas: A Behavioural Economic Study

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Abstract

The consumer habits are formed mainly on the basis of convenience, social norms & cognitive shortcuts, even when many programs & awareness drives are conducted. The three Rs—reduce waste, conserve resources, save money, safeguard health, encourage cleanliness, and support environmentally balanced and sustainable rural development. Senator Gaylord Nelson in 1970 initiated for the first Earth Day which evoked a nationwide environmental awareness & later led to the creation of the EAA and other new laws which aims at encouraging recycling practice, conservation. This led to the development of the 'Three R's – Reduce Reuse Recycle' of sustainability. This study focuses on the rural consumers in Kannur district of Kerala & how they make day to day decisions on the 3R's. With the background of behavioral economics this research portrays the shopping patterns, how they reuse and whether they recycle goods, what ceases them from reusing or whether small eco-friendly practices lead towards sustainable development. The practical aspect of sustainability at the household level, where the majority of trash is produced, is the main emphasis of this study, making it significant. Social conventions, economic circumstances, and cultural customs influence how individuals approach commonplace objects in rural locations like Kannur district. The study uses behavioral economics to identify the true motivations underlying people's decisions, going beyond awareness efforts and regulations. In the long run, this can help achieve national objectives like the Swachh Bharat Mission and Sustainable Development Goal 12 on responsible consumption and production, as well as enhance rural waste management and lessen environmental pressure.

Keywords: *Reduce, Reuse, Recycle, Sustainable Development, Environment, Waste management.*

Introduction

Environmental conservation and sustainable waste management are the growing concerns of the globe. The 3R's serves as the fundamental principles for these two by being portrayed as a triple layer pyramid (Petzet, M. & Heilmeyer F, 2012). In order to achieve a circular economy by reducing the number of materials we purchase and use, reusing the items and recycling items. This also helps in gaining few more positive outcomes to the environment & the economy like minimizing both air and

water pollution from disposal, conserving material for reusing, recycling and reducing the quantity of energy for production of new products (Maine Department of Environmental Protection, 2019). The three R's while precisely breaking down has its own individual significance. reduce, it simply states reducing the quantity of waste we produce. This also advocates for responsible and necessary consumption and conscious choices of shopping to minimize waste. reuse, by encouraging the life span of products rather than discarding it conserves something for future generations too, by reducing demand for new products. Recycle, by converting a waste material to a useful product, this concept conserves natural resources, reduce greenhouse gas emissions. By promoting recycling programmes, a more sustainable and circular economy is being developed (Institute of life sciences, 2024).

According to Nikola Simpson the head of UNDP's Barbados and Eastern Caribbean Blue Economy Accelerator lab with the current rate of production, there will be more plastic than the fish in the sea by mid-century. Plastic which is completely indestructible is completely everywhere (Dynahlee Padilla-Vasquez, 2024). By pose as a crucial threat to human health and environmental health the UNEP estimates the production, use & disposal of plastic could account for 19 percentage of the global carbon budget in Total by 2040 (United Nations Foundation, 2024).

There are many initiatives addressed and encouraged globally with the background of 3R's, some of them are stated below:

i. Curtiba, a city in Brazil recycles over 70 percentage of the waste which is cheaper than using landfills and do create jobs. Old buses are being renovated into mobile schools.
ii. With the highest recycling rates in the world Austria has banned plastic bags since 2020.
iii. Canada has its focus on food waste, proper segregation and management is done as it reduces carbon dioxide.
iv. Wales with a more people centric approach recycle 65 percentage of their total waste with the help of residents and the council. This also led the way in the UK.
v. San Francisco with a 3-category recycling scheme comprising of compost recycle & landfill which includes food waste, glass and hard plastic, cat litter and ceramics plans to reduce their use of landfills to zero by 2030.
vi. Zurich has 12000 different points for recycling and is done through door-to-door accumulation or at different collection points. It is made mandatory by law and a failure result in fines.
vii. With the lowest usage of landfills in the world, the waste management system in Singapore facilitates collection and centres to sort waste into various recycling streams.
viii. Germany leads the world in a sustainable and responsible way of waste management by reducing their total waste by 1 million tonnes every year (Sustainability Magazine, 2021).

The Indian Outlook on 3r's

The rising population and rapid industrialisation push waste generation to higher rates. India has a recycling rate close to 70 percentage plastic and 27 percentage paper (The week,2024). The government of India enacted some rules on solid waste management and plastic waste management in 2016 which outlines the cities to become zero waste by near future and mandates a proper

ISBN code 978-93-83302-82-6

segregation of waste. Here the rules emphasis not just for 3R's but 4R's of waste management hierarchy. i.e. Reduce-Reuse-Recycle-Recovery. But because of the non – sustainable waste management practices and inactiveness of citizens along with the lack of proper implementation and monitoring of guidelines, still recyclables are left out with the 3R practices.

The Indian practices for sustainability invoke from its great cultural heritage and tradition, India has great examples to reveal this, some of them are stated below:

i. The National Games in November 2015 initiated the green protocol under Suchitwa Mission, wherein eco- friendly cutleries were used like stainless steel glass, porcelain as an alternative to disposable plastic. This was implemented by serving water in steel tumblers & is still adopted successfully in various institutions and events including the Legislative Assembly. The use of eco-friendly utensils was adopted by other municipalities in India for waste reduction.
ii. Indore in Madhya Pradesh is a zero-waste city with the practice of 100 percentage door to door garbage collection and segregation. The city focused on 4 dimensions precisely to make it clean i.e. by removing garbage bins, cleaning of roads at nights and an innovative design for municipal waste trucks i.e. of 3.3 cubic metre capacity and involving children in the mission by making them brand ambassadors.
iii. The 8th Regional 3R forum was hosted by Indore which was indeed the cleanest city of India (Swachh Survekshan, 2017). On that occasion Shri Hardeep Singh Puri (Minister of State (I/C), Ministry of Housing and Urban affairs stated that Reduce-Reuse-Recycle has been an integral part of India's DNA & culture for centuries (Press Information Bureau, Government of India, Ministry of Housing and Urban Poverty Alleviation, 2018).
iv. The ET Rajasthan Panel Summit organized a discussion with officials, industry experts to suggest strategies for smart and clean cities with technology, policies and people participation actions. District Collector of Churi District, Abhishek shared combined initiatives focusing on rural and semiurban areas. He advocated the efforts to set up 3R centres in villages, educational institutions and community centres. These centres can serve as a hub for providing awareness to residents about sustainable consumption practices, upcycling discarded materials and to segregate wet and dry waste. India adopts a futuristic approach with the 3R's i.e. rather than trying hard to convey the concept to the middle aged it focuses on the youths. They mainly focus children and engage them in programs designed specifically to teach environmental awareness at early stages, waste segregation, composting techniques and innovative reuse practices (Mahima Jain, ET Government 2025).

Information, education and communication through social/digital media was the key driver that brought a behavioural change which is the crucial turning point to the success of Swachh Bharath Mission India also has several successful examples in the 3 R' s scenario, it is briefed as follows:

i. Delhi NCR has a refill model of milk token system by Mother diary as a leading milk supplier. There customers visit kiosks and fill up milk in their own container from the vending machines.
ii. The fashion industry of India also creates a high standard of ethics and sustainability with regard to recycling by crafting their attires from fabrics sourced from private heirloom collections to daily wardrobes of women and even the iconic Durga pooja

ISBN code 978-93-83302-82-6

pandals of Kolkata. Lata Sita is a pioneering design studio which uses a closed loop supply chain with zero waste.

iii. The Indian Mattresses Industry prevents textile waste from going to disposal sites by making them into mattresses.

iv. Namo-E-Waste which has collection centres over 12 states and Union Territories in India helps in Reduce Reuse and Recycle of E assets. They have a strong profound client list including Taj hotels, ICICI Bank, Tata Sky and Godrej.

v. A Hyderabad based Startup Recykal founded in 2017 ensures higher rates of waste collection and recycling with the involvement of all stakeholders and paves way for a circular economy.

vi. Thaely, a brand founded by Akshay Bhave has an innovative product - sustainable sneakers. The brand has recycled 36000 plastic bags and 25000 bottles as of august 2020. The components used for making sneakers include recycled waste materials.

vii. The Panaji city corporation has implemented a very generous and interesting plan which encouraged people's participation called shop with your waste. This campaign acts as a Barter system where people are encouraged to produce clean and segregated waste in exchange for goods from local grocery stores (Documentation of Best practices on 3R's -SBM 2.0, 2023).

viii. The Government of Mizoram as a part of Swachh Bharat Mission (Urban) 2.0 under the initiative of Urban Development and Poverty Alleviation Department introduced a permanent Reduce-Reuse-Recycle centre on 14th August 2025. Portraying the popular phrase "one man's trash is another man's treasure" it aims, promoting the principles of 3R's among citizens (Directorate of UD & PA Department-Mizoram, 2025)

India, within many industries and at various levels addresses the 3R 's in various forms and promotes responsibility and sustainability among citizens towards environment and themselves. The crucial consequences on health and environment are mainly due to inefficient waste management system and this can be effectively tackled with an integrated approach of the 3R's. By shifting the conventional waste disposal practices to a more holistic approach, an effective urban waste management can be achieved along with waste minimization and resource efficiency. With the integration of baseline data collection, policy framework, multistakeholder participation and initiatives cities can transform towards a circular economy, where waste is considered as a valuable resource (Global Development Research Centre,2024).

The Kerala Outlook on 3r's

Kerala has a decentralised approach towards waste management, With the background of both Suchitwa Mission and Haritha Keralam Mission (Vajirao and & Reddy institute, 2025). The Malinya Muktha Navakeralam campaign with the combined efforts of local self-government departments (LSGD) has a goal of Kerala becoming a garbage free sate. Now, the state came up with a very practical and pioneering scheme i.e. to impart lessons of sustainable waste management practices to young minds. The textbooks prepared by the SCERT has included contents on the scientific and sustainable waste management practices to promote awareness. Despite the high literacy rate, the civic responsibility, all households must take responsibility for waste management. In reality the 3R's, Reduce Reuse and Recycle are ignored. The youth should be more encouraged to endorse environmental sustainability (Anna Jose, The New Indian Express,2025).

Technology has a great role to play with the 3R's, as it is assumed that tech- innovation firstly approaches the bigger cities, but the remote villages in Kerala are setting benchmarks for a sustainable living. Fishing is one of the major sources of livelihood for the people in Kollam, there the fishermen face issues of brunt of the plastic waste in the sea and their catch reduced to 20 percent. They realized that plastic waste is a threat to their source of livelihood. With the combined efforts of Government and Ministry of Fisheries they enacted a project for a recycling facility ran by women. By the end of 2018 they had procured 65 metric tonnes of plastic waste from sea. With an interesting and innovating concept of construction of roads with recycled plastic Eraviperoor a village in Kerala, has taken a sustainable action (CSR Journal,2019).

It is expected that the generation of municipal solid waste in Kerala will rise to 7500 tons by 2025, which is a significant challenge for waste management. The Kudumbashree (Self Help Group in Kerala) plays a vital role in waste management by encouraging community participation and further empowerment. The waste management sector of Kerala has high potential for growth, with the rising demand for recycled products. Technological innovation and collaboration of public and private enterprises. By being aware of its potential, with effective and efficient policy implementations, active stakeholder participation with national and global frameworks of waste management (Invest Kerala, 2024).

Objectives

Following are the objectives set for this study:

1. To analyse the factors determining the decisions on reduce reuse and recycle behavior of consumers in Kannur District.
2. To examine the behavioral and socio-economic aspects behind waste management and sustainable practices.

Methodology

This study uses a mixed approach with questionnaires and interviews in rural areas of Kannur District, in Kerala. Descriptive research design is followed. It gathers data on reduce–reuse–recycle behaviours of consumers. Simple random sampling method is used here. A total of 100 samples are studied. Both primary and secondary data is used. Primary data is collected using questionnaires and interviews. Secondary data is collected from authorised internet sources, government websites and other peer reviewed journals.

Review of Literature

Islamah, Dina (2025) in their study emphasized the importance of education on environmental sustainability along with critical thinking skills among first grade students. A private school in west Surabaya, Indonesia was the study location. The study was conducted, with 31 students and their teacher over a period of 7 weeks. Multimedia sessions, field trips along with classroom observation and International Baccalaureate theme "Sharing the Planet" unit was taken. Students were not only given awareness sessions, but practical activities with the help of projects. The results were astonishing that 92 percent attained better insights on sustainability and 87 percent showed improvement in critical reasoning. The study thus showcased the significance of integrating sustainability learning combined with reasoning skills which helps to mould a generation who properly do care about environment not just in books but in life too.

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Pandiyarajan, V. et.al (2024) in the study titled 'Three R concepts in waste management for sustainable environment' addressed the 3R's as principles for achieving sustainability. The study focuses on major environmental issues, how humans have a role in it and how the 3R's approach can preserve resources. A case study of Kalasalingam academy of Research and Education (KARE) is mentioned here. There, vermicompost is made out of solid waste, liquid waste made to undergo treatment, bio-medical, E-waste, paper waste is either recycled or disposed safely. Their findings portray creation of eco-friendly campuses by adopting 3R practices, preserving natural resources and promoting SDG goals.

Aragaw (2024) conducted research on plastic waste management in Ethiopia. The study highlights, about the instant rise of PLASTIC use since 1970's and its harsh impacts on the 3 major pillars of life the environment, health, economy. This study addresses the obstacles which reduced the effective adoption of 3R practices in Ethiopia. Some of them include: lack of national framework, limited access to recycling, limited public awareness and no proper enforcement on single use plastic bans. The study concludes by stating some innovative strategies which are essential for Ethiopia to achieve long term sustainable growth.

Rahman, Abdul, Fahzy (2024) in his article provided a more Structural practical framework for Sustainable management with the 3R's approach. It states reduce as the most effective strategy. Reuse as a method of extending the products life and recycling as a means which alone, cannot address the rising issues in waste generation and waste management. There is a requirement of infrastructural support and behavioural change at household level.

Mohan, Vishwa (2022) in his article explained the significance of waste recovery and reuse advancing India's circular economy. The article also highlights the initiatives by The Ministry of Environment, Forest and Climate change, Government of India, for promoting the efficient use of resources across many sectors. It is also revealed that 98 percent of India's solid waste is collected but only about its half is undergone processing. The E-waste recycling rate rise by 22 percent. The article concludes by stating the improvements for waste recovery and supporting sustainable growth by resource conservation, reducing pollution etc.

Data Analysis and Interpretation

The three Rs—Reduce, Reuse, and Recycle—and how rural consumers apply them in their daily lives are the main topics of this study. It examines what factors come into play when people in rural areas decide whether to use, reuse, or discard items. A number of factors are crucial, including convenience, social conventions, habits, and income.

Age of the Respondents

The following age structure was chosen for this study as it represents the most active and productive phase of a person's life. It includes students and individuals in the early stages of their careers, encompassing both young adults and a range of middle-aged individuals.

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Table 1:Age, Gender, Educational Qualification of Respondents

Sl. No	Age	Numbers	Percentage
1	15-20	7	7
2	20-25	80	80
3	25-30	2	2
4	30-35	4	4
5	35-40	3	3
6	40-45	4	4
Sl. No	Gender	Respondents	Percentage
1	Male	35	35
2	Female	65	65
Sl. No	Educational Qualification	Number of Respondents	Percentage
1	Matriculation / 12th	8	8
2	Diploma	1	1
3	Undergraduate	56	56
4	Postgraduate	33	33
5	PhD	1	1
6	B. Ed	1	1

Table 1 is depicted that 80 percentage of the respondents lies between the age group of 20-25 which shows more active participation of youngsters. Also limited responses were accumulated from middle aged people. It is evident from the above table that 65 percentage of the respondents are female and 35 percentage are male. This shows the active and enthusiastic participation and awareness of women in this study area. Gender as a factor, also has differences with opinions, economic and psychological behavior. This data portrays a highly educated sample. This reflects that the highest participation was made by undergraduates followed by postgraduates with a percentage of 56 & 33 respectively.

2. Employment Status of Respondents

The employment status of respondents reflects their current work or occupational situation. Identifying whether respondents are employed or unemployed helps in understanding their economic background. The subsequent section highlights the nature and pattern of their occupational engagement, providing a clear understanding of their economic participation and livelihood conditions.

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Table 2: Employment Status of Respondents

Sl. No	Employment Status	Number of Respondents	Percentage
1	Employed	22	22
2	Unemployed	78	78

Table 2 explain the Survey result which indicates that 78 percentage of the respondents are unemployed.

3. Importance of Waste Reduction to Environment and Society

Waste reduction is essential for protecting the environment and promoting sustainable development. It helps conserve natural resources, reduce pollution, and minimize the negative impacts of waste on ecosystems. Effective waste reduction practices contribute to healthier communities and greater social responsibility toward environmental preservation. The data illustrate respondents' views on the significance of waste reduction for environmental and social well-being.

Table 3: Perception of Respondents on Importance of Waste Reduction

Sl. No	Perception	Respondents	Percentage
1	Very Important	99	99
2	Somewhat Important	01	01

Table 3 From the table, it can be noted that 99 percentage of the respondents perceive waste reduction as very important. This shows the concern and awareness among people regarding the environmental harms which occur due to excessive waste generation in the environment. It shows a positive attitude and collective awareness towards the significance of waste reduction.

4. Knowledge on Waste Management

Knowledge on waste management reflects the respondents' awareness and understanding of proper methods for handling, reducing, and disposing of waste. It is essential for promoting effective recycling, segregation, and sustainable environmental practices. Assessing this knowledge helps determine how well respondents can contribute to minimizing environmental pollution and supporting community waste reduction efforts.

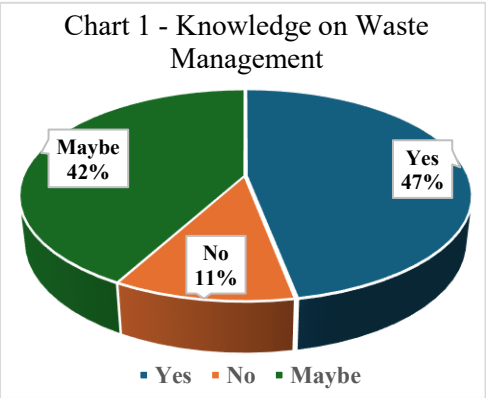

Chart 1 examine the respondents have knowledge about Waste management. This data also reveals that there is a significant knowledge gap in the economy as 11 percentage have no knowledge about waste management and the remaining 42 percentage who are uncertain are aware about the issues regarding waste but they are unsure about proper waste management practices, it can be regarding collection, segregation, recycling etc. This highlights that there is high need for educational and awareness drives for proper waste management, there lacks practical knowledge and confidence among people.

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5.Avoidance of Buying Unnecessary Items

The respondents' knowledge on waste management reflects their awareness and understanding of proper waste handling practices. Assessing this knowledge helps determine how well they comprehend the concepts of waste segregation, recycling, and disposal. This information is important in evaluating their capability to contribute to effective environmental management and sustainability efforts.

Table 4: Avoidance of Buying Unnecessary items

Sl. No	Avoid Purchase	Respondents	Percentage
1	Yes	67	67
2	No	10	10
3	Maybe	23	23

Table 4 explain the respondents regarding, whether they try to avoid purchasing unnecessary items or not. From the sample 67 percentage of respondents here portrays a strong tendency of mindful spending & they are conscious about avoiding the purchase of unnecessary items. The 23 percentage of respondents have an inconsistent behavior in their spending patterns; they are aware of the spending on unnecessary items but they may occasionally chose purchasing nonessential items too. The remaining 10 percentage are not at all conscious about their purchasing behaviors and they might not have proper budgeting plans too. The data thus depicts a conscious consumption pattern.

6. Shopping with Cloth / Reusable Bags

The use of cloth or reusable bags when shopping is an important practice that helps reduce plastic waste and environmental pollution. It reflects consumers' awareness and commitment to sustainable and eco-friendly habits. Assessing respondents' behavior toward using reusable bags provides insight into their level of environmental responsibility and support for waste reduction initiatives. The Chart 2 - shows the record of the respondents regarding shopping habit as, whether they carry cloth / reusable bags while shopping. It is evident that half of the respondents are following sustainable purchase practices. The 34 percentage of respondents who carry reusable bags sometimes, know about the environmental concerns but they are not actively following practices in their routine. It can be interpreted that even after huge awareness campaigns, environmental degradation and calamities there remains a portion of people who are still not following eco-friendly practices in their daily lives. This points out for a stronger practical awareness drives and encouragement to make reusable bags a part of our life.

7. Single Use Plastic Awareness

Awareness of single-use plastics is essential in understanding how individuals perceive the environmental impact of disposable plastic products. It reflects the level of knowledge and concern people have regarding pollution caused by plastic waste. Evaluating respondents' awareness helps determine their willingness to adopt sustainable alternatives and support waste reduction efforts.

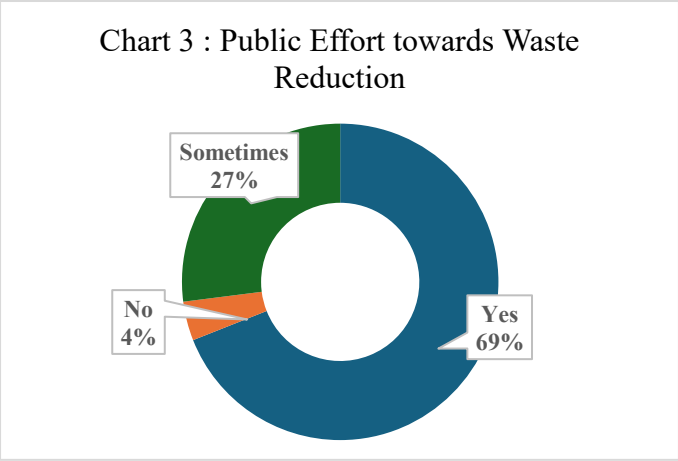
Table 5: Single use Plastic Awareness

Sl. No	Avoid Single Use Plastic	Respondents	Percentage
1	Yes	35	35
2	No	12	12
3	Sometimes	53	53

The table 5 shows the record of the awareness of respondents regarding single use plastic. The largest segment of 53 percentage depicts an awareness gap, i.e. many people know the fact that single use plastics are very harmful but they are not able to transform their thoughts into action by avoiding the usage of single use plastics in their daily lives. The 35 percentage of respondents shows a committed behavior towards environment and sustainability.

8. Public Efforts Towards Waste Reduction

Public efforts toward waste reduction play a vital role in minimizing environmental degradation and promoting sustainable living. These efforts include community clean-up drives, recycling initiatives, and awareness campaigns that encourage responsible waste management. Understanding the extent of public participation helps assess the effectiveness of collective actions in achieving environmental sustainability.



The chart 3 indicate the respondents regarding their effort to reduce waste. This result shows that the respondents have high environmental responsibility with 69 percentage. It also depicts a positive attitude and rising public consciousness about sustainability and ecological wellbeing. The 27 percent respondent who opted for sometimes have a limited awareness about this and they lack consistent actions to be done. The minority group of 4 percentage should be properly addressed regarding environmental harms due to increasing waste generation or else their acts will lead to huge environmental and societal impacts.

9. Glass Jars / Bottle Reuses

The reuse of glass jars and bottles is an effective way to reduce waste and promote environmental sustainability. By repurposing these items, individuals can minimize landfill contributions and conserve

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natural resources. Assessing respondents' practices in reusing glass containers provides insight into their commitment to sustainable consumption and waste reduction.

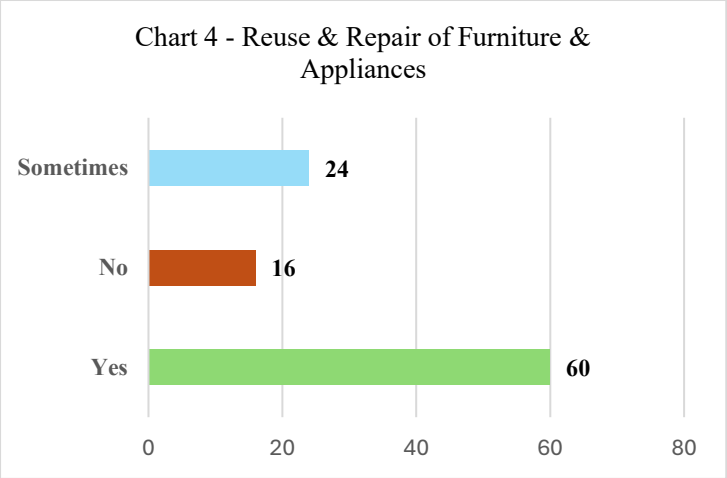
Table 6: Reuse of Glass jars and Bottles

Sl. No	Reuse	Respondents	Percentage
1	Yes	74	74
2	No	05	05
3	Sometimes	21	21

The table 6 shows the reuse of glass jars / bottles. The data showcases a sustainable reuse behavior of glass jars and bottles**.** Three fourth of the respondents show a highly enthusiastic reuse behavior. The reuse, not only reduces waste but conserve energy and raw materials needed for further production too. The 5 percentage who do not practice reuse might be unaware of environmental, economic benefits of reuse and have hindrances by their lifestyle too.

10. Reuse and Repair of Old Furniture & Appliances

Reusing and repairing old furniture and appliances is an important practice that helps reduce waste and conserve resources. It extends the life of products, minimizes environmental impact, and promotes sustainable consumption. Examining respondents' involvement in these practices provides insight into their commitment to waste reduction and environmentally responsible behavior. The chart 4 illustrates the reuse & repair of furniture and appliances by respondents. This shows a mix of moderate and Sustainable pattern. The majority of 60 percentage opted for reusing and repairing furniture and appliances, as it is a commitment approach towards environment and a means of minimal living. The 24 percent of respondents reuse and repair only sometimes as they might consider the repairing cost, accessibility towards repairing services. The remaining 16 percent are focused on consumerism by lacking the knowledge about sustainability practices and environmental consciousness.



11. Frequency of Reusing Items for Other Purposes

The frequency of reusing items for other purposes reflects how often individuals repurpose materials instead of discarding them. Regular reuse helps reduce waste, conserve resources, and support environmental sustainability. Analyzing respondents' habits in this regard provides insight into their commitment to waste reduction and sustainable practices.

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Table 7: Frequency of Reusing items for Other Purposes

Sl. No	Frequency of Reuse	Respondents	Percentage
1	Often	32	32
2	Occasionally	64	64
3	Never	4	4

The table 7 examine the frequency of reusing items for other purposes by the respondents. Here the majority 64 percent recognize the significance of reuse but they are not able to make it a consistent behavior of their routine so they opt for it occasionally. The 32 percentage who often practice reusing might be creative enough to reuse materials and show a dedicated act towards sustainability and optimum use of resource utilization. The small fragmented group of 4 percentage have limited awareness and there are high chances for them to prefer disposable consumption patterns.

12. Revenue or Income Generation

Revenue or income generation reflects the financial activities and economic engagement of individuals or households. Understanding respondents' income sources helps assess their economic stability and capacity to participate in sustainable practices. Analyzing this data provides insight into how economic factors may influence behavior, decisions, and lifestyle choices.

Table 8: Revenue or Income Generation

Sl. No	Revenue or Income generation	Respondents	Percentage
1	Yes	14.4	14.4
2	No	58.8	58.8
3	Maybe	26.8	26.8

The table 8 shows the revenue or income generation by the respondents. This data states that only a small portion i.e. 14.4 percent are able to generate income or revenue out of reuse practices. A larger fragment of 58.8 percent can be considered as people who involve in these practices focusing on personal or environmental reasons rather than focusing on financial gains. The respondents who opted maybe can be suggested as those who are uncertain or have limited knowledge about the economic potential of these practices. It is evident from this data that even though sustainability and ecologically relevant practices have high social value their economic potential is yet to be discovered or underexplored.

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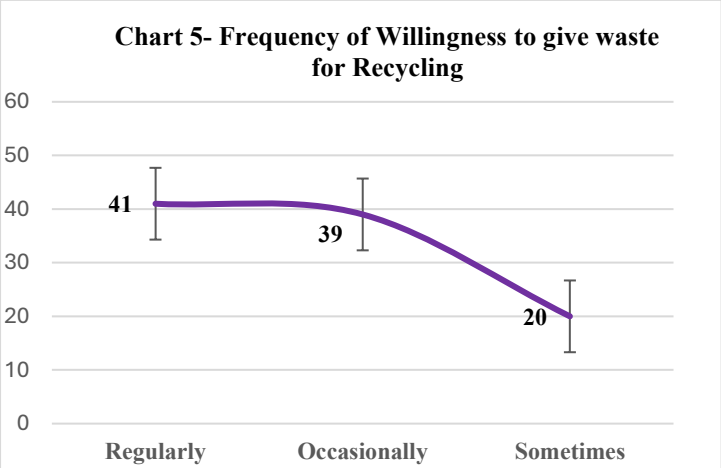
13. Frequency of Willingness to Give Waste for Recycling

The frequency of willingness to give waste for recycling reflects how often individuals participate in recycling activities. Regular contribution to recycling helps reduce environmental pollution and promotes sustainable waste management. Analyzing respondents' willingness provides insight into their commitment to environmental responsibility and support for recycling initiatives. Chart 5 shows the categorical record of the frequency of readiness of respondents to give waste for recycling. This survey data depicts a Positive Outlook i.e. Majority are willing to Give waste for Recycling Regularly. We can also assume that they may have consistent recycling practices and proper awareness, concern about Environment, Society and Economy. The 39 percent who are ready to give occasionally are aware but they may face obstacles of time, convenience or limited access to collection systems. The 20 percent who opted for sometimes can be motivated and encouraged with the help of community drive etc. A crucial finding here is nobody opted for the option never which is truly a positive remark as Everyone has at least Some level of readiness to practice recycling.



Findings of the Study

i. There exists a wide knowledge gap among people regarding waste management as there is only mere awareness being given and not a practical session on it. As 99 percent of people stated that waste reduction is very important it shows their strong awareness level.
ii. People are not actively motivated to carry reusable bags and make it a part of their routine. There exist some lifestyle barriers to prevent reusing like, time, convenience, accessibility, lack of Innovative ideas etc.
iii. Even after knowing the environmental degradations caused due to waste many are still choosing for disposable consumption. Economic potential of reuse practices is yet to be discovered or unexplored.
iv. With no one opting for an option on "never" for recycling, it shows that everyone has some level of commitment towards recycling more specifically to the environment. The primary obstacles to recycling are lack of time & lack of innovative ideas.
v. It is a crucial issue that 11 percent (survey data) of respondents are not ready to participate because 'they don't have concern towards environment'. this makes it harder to achieve long term sustainable goals.
vi. Many people use glass, paper, bamboo as an alternative for plastic, bamboo brush, bamboo comb etc. are preferred. Lack of availability is one of the main barriers in front of people for preferring alternatives for plastic, followed by convenience and cost.
vii. Better awareness with practicality and easy collection and management system are the crucial and strong motivators which encourage people to practice recycling. rewards and incentives and community support also have due role in this.

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Suggestions

i. Integrate practical environmental education from primary level. Encourage eco-friendly packaging for products in glass jars or thick cardboard containers. Also encourage to practice thrifting culture, which is very popular in European countries.
ii. Implementation of government policies is not just enough, proper regulation, reviews and updating should be done. Mere awareness should be avoided and practical exposure should be provided.
iii. Reward programs can be introduced for returning recyclable materials this will encourage public participation. Provide easy accessibility to recycling bins. Mobile apps and AI can be used appropriately for easy management of the 3r 's even by common people.
iv. Providing internships in NGO's and organizations which promote environmental protection can develop commitment in young minds towards environment, society and sustainability.
v. Government can provide subsidies for compost projects. Promote clean up drives. Educate people to understand what is necessary and unnecessary when it comes to purchase.

Conclusion

The findings of this study indicate a complex interplay between awareness, behavior, and systemic barriers in waste management practices. While an overwhelming majority of respondents recognize the importance of waste reduction, this awareness does not consistently translate into action, revealing a significant knowledge-practice gap. Behavioral disinterest, lifestyle constraints, and limited access to alternatives—such as reusable bags and eco-friendly materials—emerge as primary obstacles, compounded by insufficient practical engagement and innovation in recycling initiatives. Promisingly, universal participation in some form of recycling demonstrates inherent environmental commitment, though a small but critical proportion remains unresponsive, stressing the challenge of achieving inclusive and sustained sustainability goals. These results underline the necessity of multi-dimensional interventions that combine practical education, systemic facilitation, economic incentives, and community engagement to transform awareness into consistent, measurable environmental action. Importantly, nurturing an environment where sustainable alternatives are accessible, convenient, and economically viable will be key to bridging the gap between knowledge and practice. An encouraging insight from the study is that enhanced accessibility, targeted incentives, and hands-on awareness programs can motivate consumers to adopt sustainable practices, contributing to the success of India's Swachh Bharat Mission and the achievement of Sustainable Development Goal 12.

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