

## Habits & Attitude of Householders About Solid Waste Management in Pune City

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### Abstract

Solid waste management is one of the challenges faced by many cities. Poor solid waste management will lead to various problems in health, environment, and socio-economic aspects.

Pune has been innovative in its solid waste management. To help achieve this the city has tied up with a group of marginalized women at the forefront of a campaign to clean the city. Through an agreement with the Pune Municipal Corporation (PMC), more than 3,000 women workers provide door-to-door waste collection services to over 600,000 homes in the city,

The waste generators, i.e. the householders are major part of the waste management process. Their attitude and habit about the waste generated in the household and how it is handed to the municipal corporation affects the whole waste management of the city.

In this study descriptive quantitative questioner was prepared by researcher. A total 708 respondents or the householder participated in this study.

Results show that people are more aware about the disposal of dry waste even its is smaller part of the composition of the total waste. It also shows that there is a rational bias when it comes to peoples' belief and their actions when it comes to recycling.

*Keywords: SWM, Habits of householders, Pune solid waste management*

### Introduction

Garbage or the waste will never finish, As the world's population continues to grow, so does the amount of garbage that people produce.

Our on-the-go lifestyles require easily disposable products, such as cans or bottles of water. but the accumulation of these products has led to increasing amounts of plastic pollution around the world.

As cities grow and the urban populations is growing having the effective and efficient solid waste management is becoming a very essential and integral part of city's administrative functions.

Citizens of the city are one of the major stakeholders of solid waste management, they are the waste generators and play important role in managing the waste, as they are required to segregate the waste into dry and wet waste. The

success of solid waste management system and consequent treatment of waste largely depends on citizens performing segregation at source.

Municipal solid waste is the residue or rubbish generated from households and commercial activities from municipalities. It excludes wastes generated from hospitals, industries, and electrical and electronic wastes.

**Solid waste Management in India**

As per State of India’s Environment 2023 report states that in 2020–21, India generated 160,039 tonnes of municipal solid waste a day. Of this, 50,655 tonnes— 32%—remained unaccounted for, which means that we do not know what happened to them. This unaccounted waste usually ends up choking city drains or getting burned illegally.

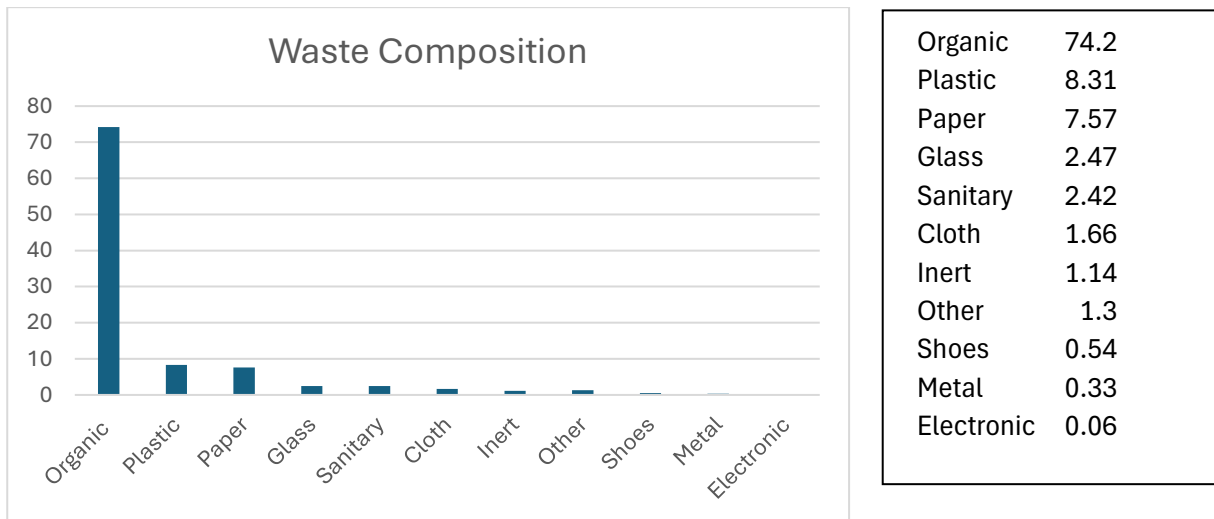
**Solid waste Management in Pune**

Pune is considered as a prosperous, vibrant metropolis, a centre of academia and business. The 9<sup>th</sup> most populous city of India and the 2<sup>nd</sup> largest in the state of Maharashtra, it is also the fastest growing cities in the Asia-Pacific region. The current estimate population of Pune city in 2024 is 4,436,000.

The commercial industries, hospitals, hotels, and residential buildings in Pune create approximately 2,000 tonnes of municipal solid waste daily. By 2025, the projected total amount of municipal solid waste that will be generated and managed by PMC will rise to 3,255 tonnes per day.

Approximately 70 per cent of the municipal solid waste is generated by households, while hotels, restaurants, and other commercial establishments together account for the other 30 per cent

Approximately 87.5 per cent (1,750 tonnes per day) of municipal solid waste in Pune is collected.



Most of the waste generated in Pune city is that of organic waste, which is around 74.2% followed by plastic waste 8.31 % and paper 7.57%.

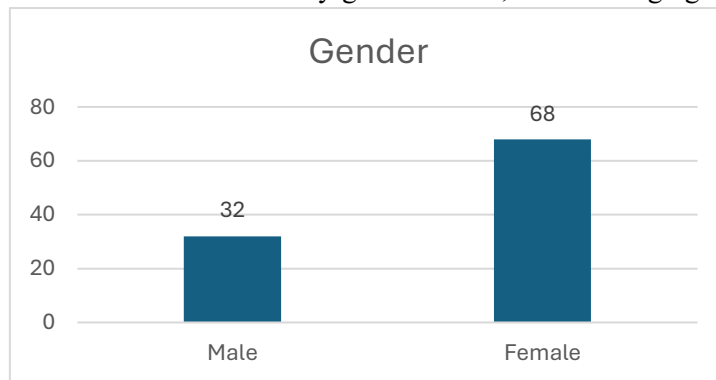
### Research Methodology

A questionnaire was prepared to understand the habits and attitude of people with regards to waste management. This questionnaire was sent to randomly chosen people and around 708 respondents recorded their opinions by filling the questionnaire.

The question had various questions that covered the topic such as the who is responsible for the waste management in the household, and what happens to their household waste and the satisfaction level with regards to the local government and the waste management of the city. The respondents were from both genders and from all types of social class.

### Results and Discussion

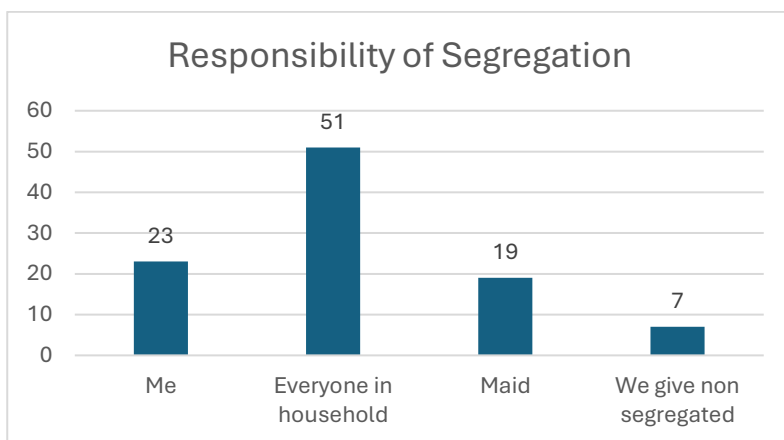
The questionnaire was designed to understand if the waste is segregated in the households along with responsibly of segregation at the household. If the whole family gets involved, then the segregation at source happens more



effectively and regularly.

In majority of household its usually females who oversee household waste, in terms of storage or giving it to person who comes to collect. There is no surprise here to see that there 68% of women respondents, while male make it 32%.

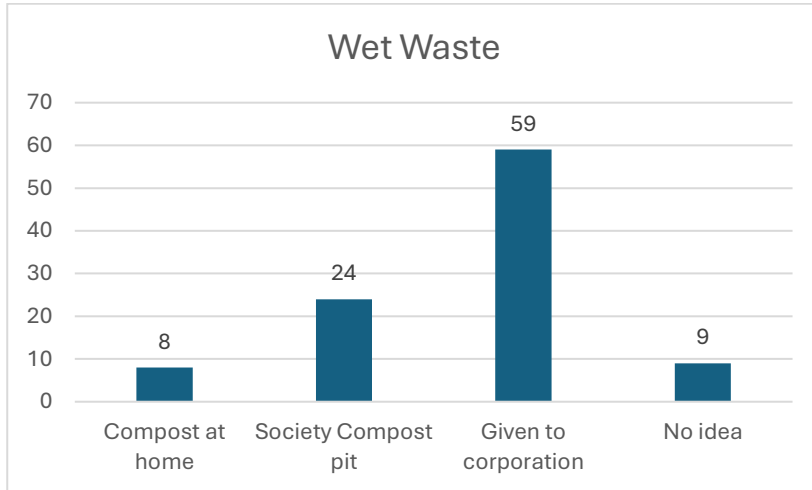
Table 2. Person responsible for segregation of waste in the household



When inquired about who is responsible for the segregation of the waste, it clearly shows that 51% households everyone in the family is responsible of the waste followed by 23% of the respondent themselves taking the role of segregator of waste. Many households do employ maids for the household chores and it's no surprise that they are

also part of segregation at households at 19%, while around 7% people do not segregate and give unsegregated waste. The unsegregated waste creates a problem for the disposal or for the recycling.

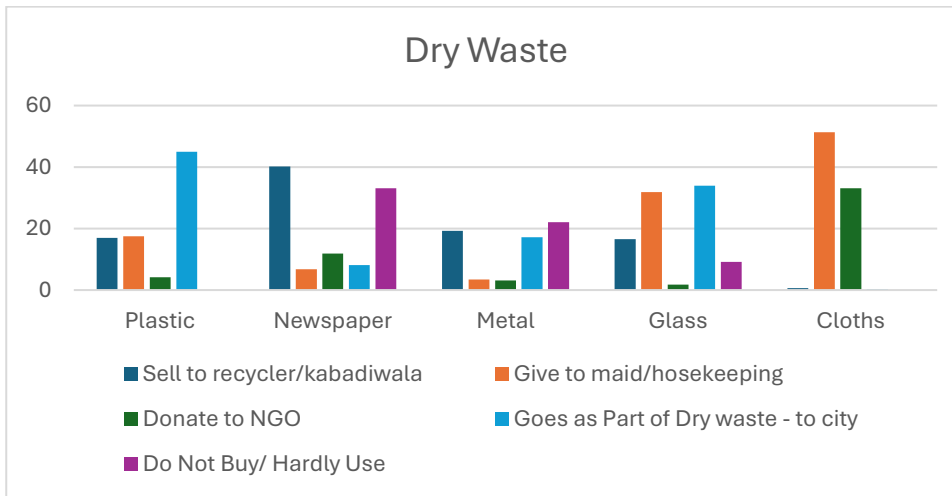
Table 3 What happens to the wet/organic waste.



As per the Swatch Bharat Mission guidelines all housing society/ commercial establishment or hotels etc. that generate more than 100kg of waste should be processing their own wet waste at site and only the dry waste is to be given to the Pune Municipal Corporation collection system. That is evident where 24% have composting pits in society itself, while majority of that is 59% wet/organic waste is still collected by the corporation. While around 9% are not aware of that means it is either not collected by the corporation or person answering is not the person who is aware of what happens to their wet waste.

Table 4. What Happens to Dry Waste

Options	Plastic	Newspaper	Metal	Glass	Cloths
Sell to recycler/Kabbadiwala	17	40	19	17	1
Give to maid/housekeeping	17	7	3	32	51
Donate to NGO	4	12	3	2	33
Goes as Part of Dry waste - to city	45	8	17	34	0
Do Not Buy/ Hardly Use		33	22	9	



Dry waste forms lesser part of cities generated waste composition but has many elements to it. Dry waste generally means the waste which is non-biodegradable, and it can be recycled. Dry waste includes items such as bottles, cans, clothing, plastic, wood, glass, metals, and paper. It also includes inert materials. In this research we have been concentrating on the households and the waste generated there, that is why we have only focused on plastic, newspapers, metal, glass, and cloths.

This clearly shows that most of the plastic waste 45% still ends up as part of the dry waste which is collected by the city municipal corporation. While only 17% respondents sell it or give it to maid or housekeeping. And only 4% is donated to NGO.

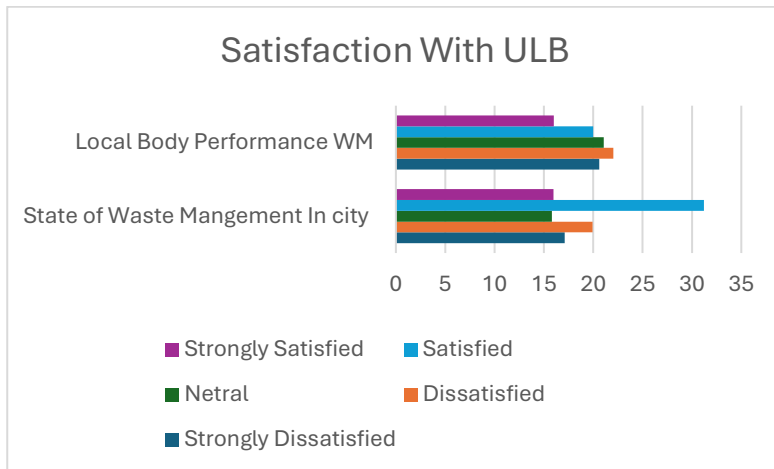
When it comes to newspapers, the age-old custom of selling it to Kabbadiwala or recycling persists which is shown by 40%, and number of people not buying newspaper is also very high at 33%, which could be the effect preference for reading it online. Very less 8% goes as part of dry waste collected by Municipal Corporation.

While when it comes to metal 22% of people hardly buy or create metal waste. This could be because the very little food comes in the metal cans. The 19% people sale it to Kabbadiwala.

Glass waste also goes 34% as part of dry waste to the city and 32% is given to the maids or picked up by housekeeping.

When it comes to cloths no one throws away the cloths as part of dry waste, as 51% is given to the maids and 33% is donated.

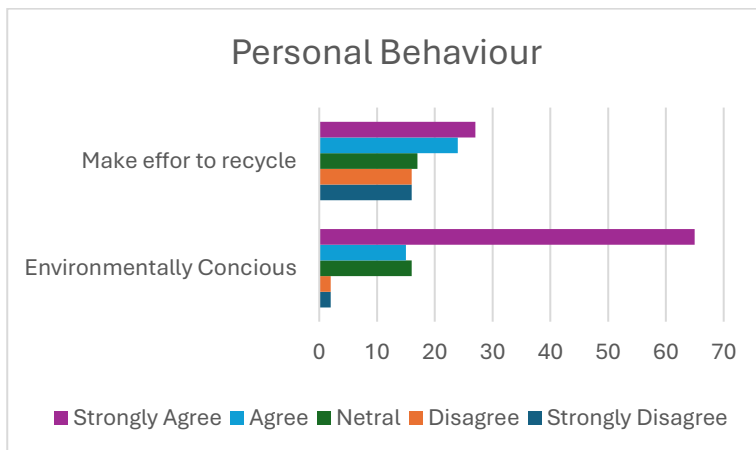
Table 5 Satisfaction level with Waste Management in the city



Respondents were asked to register their opinion on 5-point Likert Scale, and had to Strongly Satisfied, Satisfied, Neutral, Dissatisfied and Strongly Dissatisfied were the choices given for few statements.

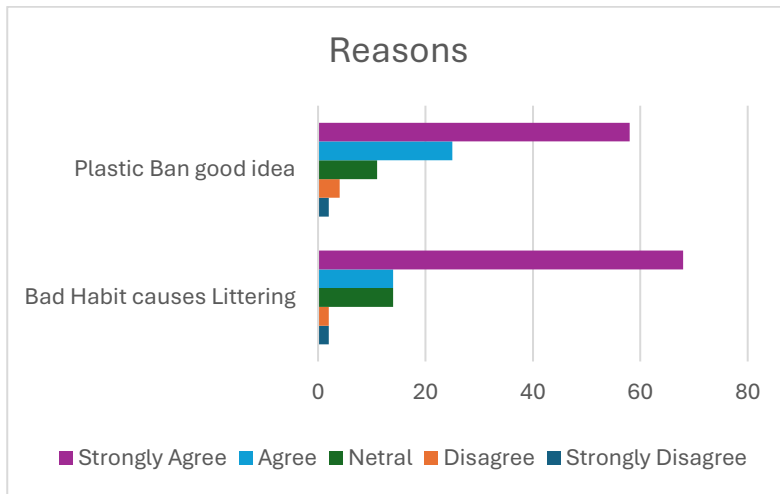
Here they were asked their opinion on current performance of local municipal corporation, and it shows that it is quite mix reaction, wherein all the answers fall between 16% strongly satisfied while 21% strongly dissatisfied with the performance of waste management. While asking about current state of waste management in the city 47% are either satisfied & strongly satisfied while 37% are dissatisfied or strongly dissatisfied while 16% have remained neutral. This shows that in some areas there may be better service of collection or may be some people are unaware of the way waste management works in the city.

Table 6 - Opinion about environment



The researcher wanted to understand how people view their own behaviour on 5 -point Likert Scale. For the question, “I am environmentally conscious person”, 65% have totally agreed with that, while agree comes at 15%. While only 2% each for disagree and strongly disagree. This shows that most people like to feel that they are environmentally conscious, but their efforts to recycle dose not support this statement. When asked about their efforts to do the recycling of their own household waste? Only 27% has strongly agreed and 24% have agreed to the statement. This could be due to the cognitive bias that we all have, it is called as Dunning-Kruger effect when a person’s lack of knowledge and skill in a certain area causes them to overestimate their own competence.

Table : Reasons



The last question focused on what people think about single use plastic ban and the reason for littering. Where 58% people agree to the single use plastic ban, while 68% feel that people’s bad habits cause the littering. Littering has a negative impact on the environment.

### Conclusions

The study shows that in majority of households all the residents are responsible for the segregations. It also shows that most of the organic waste still goes to the corporation for further treatment. Only 8% people compost it at home. The story is different when it comes to dry waste even though its only 26% of the total waste. Cloths are handed over to someone for use instead of throwing it as part of waste. Newspapers are recycled and given to Kabbadiwala by 40%. The satisfaction with the way waste management carried out in the city shows mixed response and no clear satisfaction or dissatisfaction. It clearly shows that majority 65% of people like to think that they are environmentally conscious citizens, but the contradiction comes to light when only 27% of people are involved in recycling.

This study clearly shows that there is further needed to study believes and action as well as more awareness is required to educate householders on composting, and ways to recycle.

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