# Household Plastic Waste Management Practices: An Environmental Economics Approach

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## Abstract

*The problem of plastic waste has still not been resolved in households because of lack of proper segregation, disposal and recycling of plastics in the household. This study investigates the plastic waste management practices, the challenges of plastic waste management and the correlation between environmental awareness and plastic waste management practices. The primary data was obtained from structured questionnaire and 100 respondents, and it was analysed by descriptive statistics and correlation analysis. The results indicate that environmental awareness got the highest mean score (M = 4.00) and plastic waste management practices got M = 3.34. There was a positive moderate correlation between environmental awareness and plastic waste management practices (r = 0.60, N = 100). The research emphasizes the need for greater awareness towards the environment and the need to address the challenges at the household level to reduce the use of plastic waste*

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*Keywords: Household Plastic Waste, Environmental Awareness, Waste segregation, Recycling*

## Introduction

Although more attention is currently being paid to plastic waste management, management of plastic waste at the household level is still a concern. The lack of suitable segregation, disposal operations, limited recycling opportunities and insufficient supporting facilities can affect the effectiveness of the management of plastic waste in households. It has been pointed out by Chen et al. (2021) that the barriers to plastic waste management are still related to lack of public awareness and interest in recycling by households. In a similar finding, Ulum et al. (2024) reported that waste segregation was one of the key challenges in sustainable

plastic waste management, as was limited recycling facilities and lack of community awareness. Recent data from Samarinda also suggests that there is limited involvement in sorting and recycling by the household and indicated that there is a gap between knowledge and practice, as environmental knowledge or awareness does not necessarily lead to being able to conduct waste management practices (Rahmatullah et al., 2026).

Household practices, environmental awareness and supporting infrastructure have been emphasized in the past for plastic waste management. The lack of public awareness and the household involvement in recycling was still critical factors in facilitating plastic waste management (Chen et al., 2021). Pongpunpurt et al. (2021) reported that environmental attitudes, perceived behavioural control and plastic waste collection facilities were correlated with plastic waste separation behaviour. According to Tam and Anh (2024) who conducted a survey on 450 households in Hanoi, the awareness and attitude of the households were important factors to influence the plastic waste management behaviour. Bad segregation, insufficient recycling facilities, and community awareness were cited as significant issues by Ulum et al. (2024) for efficient plastic waste management. However, more recently, Rahmatullah et al. (2026) revealed that the situation with regards to household sorting and recycling was limited, and reported a gap between knowledge and practice, meaning that sometimes, awareness is not enough to facilitate waste management behaviour. The results suggest that there is a need to explore the connection between environmental awareness and management of plastic waste in the house, as well as to take into account the problems of households.

The issues also emphasize the importance of an understanding of the management of plastic waste in the household not just in terms of the practices followed by the household but also in relation to the challenges that could impact on those practices. Further empirical research is required to better understand how environmental awareness relates to plastic waste management practices at the household level, not only by studying the behaviour of households, but also taking practical issues into account, such as waste segregation, disposal and recycling. The knowledge–practice gap observed in the last decade in the literature also shows the need to study if greater awareness is accompanied by better practices in the management of household waste or not, since the former does not necessarily translate into the latter.

With this background, the present study investigates the management of plastic wastes at the household level with an environmental economics approach. The study concentrates on the segregation and disposal of plastic waste by the households, problems of plastic waste segregation, disposal and recycling by the households and their environmental awareness and plastic waste management practices. The study thus seeks to explore (i) plastic waste segregation and disposal practices among households; (ii) problems encountered by the households in plastic waste segregation, disposal and recycling; and (iii) the link between environmental awareness and plastic waste management practices.

## Materials and Methods

The study used quantitative research method. A set of data that has been gathered specifically for the purpose of the research is referred to as primary data. Primary data was gathered using structured closed ended questionnaire from the total 100 respondents aged more than 18 years from simple random sampling. IBM SPSS Statistics 21 was used for descriptive analysis (percentage and mean analysis) and correlation analysis. To test the suitability of the questionnaire, reliability of the research instrument and to estimate the responses, a pilot study was conducted with 30 respondents before the main study.

## Socio – Demographic Profile

**Tabel 1: Socio-Demographic Profile**

| Variable | Category | Frequency | Percentage |
|---|---|---|---|
| Age | Below 25 years | 40 | 40% |
| | 25–35 years | 49 | 49% |
| | 36–45 years | 8 | 8% |
| | Above 45 years | 3 | 3% |
| Gender | Male | 46.00 | 46% |
| | Female | 54.00 | 54% |
| Marital Status | Unmarried | 76.00 | 76% |
| | Married | 24.00 | 24% |
| Family Size | 1–2 members | 6.00 | 6% |
| | 3–4 members | 61.00 | 61% |
| | 5–6 members | 26.00 | 26% |
| | 7 or more members | 7.00 | 7% |

| | | | |
|---|---|---|---|
| Educational Qualification | Higher Secondary | 1.00 | 1% |
| | Undergraduate | 25.00 | 25% |
| | Postgraduate | 58.00 | 58% |
| | Others | 16.00 | 16% |
| Occupation | Students | 26.00 | 26% |
| | Government Employee | 10.00 | 10% |
| | Private Employee | 29.00 | 29% |
| | Self-employed | 9.00 | 9% |
| | Homemaker | 26.00 | 26% |
| Monthly Household Income | Below 20,000 | 46.00 | 46% |
| | 20,001–40,000 | 31.00 | 31% |
| | 40,001– 60,000 | 10.00 | 10% |
| | 60,001– 1,00,000 | 6.00 | 6% |
| | Above 1,00,000 | 7.00 | 7% |

**Primary data**

**Interpretation**

The socio demographic profile reveals that majority of the respondents are between the ages of 25-35 years (49%) and below 25 years (40%). The sample is 54% female, 76% are unmarried. The majority of respondents (61%) come from a household of 3–4 persons and 58% were postgraduates. In terms of occupation, the largest group is private employees (29%) followed by students (26%) and homemakers (26%). As far as the monthly income of the household members, 46% of the respondents earn less than ₹20,000 per month, while 31% earn between ₹20,001 and ₹40,000 per month. In general, the sample is representative of young, educated, unmarried, and those with small-to-medium sized households.

**Mean Scores of Study Variables**

**Table 2: Mean Scores of Study Variables**

| Variable | Mean |
|---|---|
| Plastic Waste Management Practices (PMP) | 3.34 |
| Environmental Awareness | 4.00 |
| Management Challange | 3.75 |

**Primary Data**

**Interpretation**

Environmental Awareness has the highest mean score (M = 4.00) followed by Management Challenges (M = 3.75) and Plastic Waste Management Practices (M = 3.34). The results show that the respondents were relatively more aware about environment, and their plastic waste management practices were relatively moderate.

**Correlation Matrix**

**Table 3: Correlation matrix of Environmental Awareness and Waste Management Practices**

| Variable | Plastic Waste Management Practices (PMP) | Environmental Awareness |
|---|---|---|
| Plastic Waste Management Practices (PMP) | 1.00 | 0.60 |
| Environmental Awareness | 0.60 | 1.00 |
| N | 100 | 100 |

**Primary Data**

The findings reveal a moderate positive correlation between environmental awareness and plastic waste management practices of the respondents (r = 0.60, N = 100) meaning that the higher the respondents' environmental awareness, the more effective the plastic waste management practices.

**Results**

From the results of descriptive analysis, it can be seen that the Environmental Awareness score was the highest with a mean of 4.00, followed by Management Challenges with a mean of 3.75, and comparatively lower mean of 3.34 by Plastic Waste Management Practices. The correlation analysis showed that there is a moderate positive correlation between Environmental Awareness and Plastic Waste Management Practices with r = 0.60 (N = 100). This means that the more environmentally aware the respondent, the more positive was their knowledge about plastic waste at home.

## Discussion

The results indicate that respondents' awareness of the environment was relatively high, while their management of plastic waste in relatively moderate circumstances. Likewise, the positive correlation between environmental awareness and plastic waste management practices suggests that environmental awareness is related to improvement of household waste management practices. This discovery underscores the significance of people's awareness of their surroundings in the comprehension of plastic waste management behaviour in the respondents' household.

## Findings

The Results indicate that the highest mean score (M = 4.00) was obtained in Environmental Awareness, secondly in Management Challenges (M = 3.75) and the lowest relatively was obtained in Plastic Waste Management Practices (M = 3.34). This means that in terms of plastics recycling, respondents were comparatively modest but relatively aware in regards to their environment. The correlation analysis also showed that there was a moderate positive correlation between Environmental Awareness and Plastic Waste Management Practices (r = 0.60, N = 100); that is, the more positive Environmental Awareness, the more positive Plastic Waste Management Practices.

## Conclusion

The study concludes that, although the households have relatively high awareness about environment, their practices of managing plastic wastes were comparatively moderate. The positive relationship between environmental awareness and waste management practices indicates the importance of awareness in comprehending the behaviour of plastic waste management in household. The relatively high household mean score for management challenges suggests that households are still having problems managing the plastic waste. Thus, it is necessary that the improvement of household plastic waste management not only pays attention to the environmental awareness but also to the practical problems faced by households.

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