

# Influence of Socio-Economic Factors on Household Solid Waste Generation: A Sociological Study

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**Abstract** -Waste is an unavoidable byproduct of human society. Industrialization, density of population and urbanization has greatly increased the generation of household solid waste in rural and urban areas. The density of population also has direct effect on available resources and contributes to the large quantity of household solid waste generation. The main objective of the present research is to analyze the socio-economic factors influence on household waste generation in rural areas of Tirunelveli District of Tamil Nadu. The data are collected from 439 rural women through structured interview schedule technique in Cheranmahadevi block. The study shows that more number of the women respondents generates below three kilograms of household solid waste per week and the highest generation of household solid waste is by the marginal 6.6 per cent of the women respondents selected for the study. The result also reveals that only thirty one per cent of women know about composting and its benefits. Thus the study suggests there is a need for concerned officials and non-officials to engage residents of rural areas to create awareness about composting of bio-degradable waste.

**Keywords:** Household Solid Waste Generation, Disposal Composting, Components of Waste

## I. INTRODUCTION

Rapid urbanization, population growth, consumption pattern and migration are the main factors to accelerate the huge rate of solid waste around the world. The density of population has direct effect on available resources and contributes to the large quantity of household solid waste generation. Family income and size of the households have also contributed in increasing household solid waste. Many studies (Afon (2007), Benitez *et al.*, (2008), Jadoon *et al.*, (2014), Gonzalez *et al.*, (2010), Kamran *et al.*, (2015) and Sujauddin *et al.*, (2008) have proved that there is a significant correlation between the socio-economic conditions (family size, income and education) of the people and the generation of household solid waste. Generally, we can observe that wealthy people consume more packaged items, which results in accumulation of large quantity of inorganic materials in waste stream.

## II. METHODOLOGY

The main aim of the present study is to analyze the influence of socio economic factors in generating household solid waste and disposal in the Cheranmahadevi Block of Tirunelveli District, Tamil Nadu. In total, 439 sample

households are selected for the research. Interview Schedule is adopted by the researcher. Respondents are selected as randomly from the selected study areas. Planned behaviour theory is also applied in the present study.

## III. RESULTS AND DISCUSSION

### A. Socio-Economic Status of Women Respondents in the Study Area

The age of the women respondents has been classified into four sub groups. Thirty four per cent of the women respondents come under the age group of 38-47 years, twenty six per cent of the women respondents belong to the category of 28-37 years of age and the remaining are in the age group between 18-27 years. The average age is 41.96 years. The study clearly reveals about 38 per cent of the respondents' family size is three to four members followed by five to six members (32.3%) seven to eight members (21.4%) and 8.7 per cent of the respondents have more than nine members in the family. The monthly income of most of the women respondents is below Rs.3000.

TABLE I FREQUENCY DISTRIBUTION OF WOMEN RESPONDENTS BY GENERATION OF HOUSEHOLD SOLID WASTE (IN KG)

Variable	Frequency	Percent
Generation of household Solid waste per week in kilograms		
Below 3	199	45.3
4 - 7	122	27.8
8 - 11	89	20.3
12 -15	29	6.6
Total	439	100.0

Source: Field data

Regarding the household waste generation, more number of the women respondents generates below three kilograms of household solid waste per week and the highest generation of household solid waste is by the marginal 6.6 per cent of the women respondents selected for the study.

Regarding the major components of household solid waste generation in the residence of the women respondents, it concluded that the major share of the waste generated is bio-degradable waste, i.e. kitchen waste. However, there is cause for concern as polythene covers and plastic waste

occupy the second and third place, which demands proper waste collection and disposal techniques in order to address the hazardousness caused to the environment. The research also indicates that majority (63.8%) of the respondents are in the practice of using dustbin in their homes for collecting household solid waste to be disposed of while 36.2 per cent are non- users.

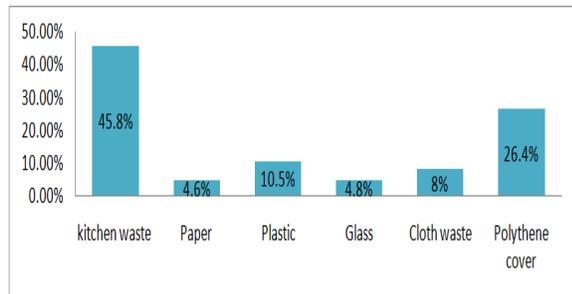


Fig.1 Major components of household solid waste

Among the users, dustbin made of plastic (39.0%), polythene covers (33.0%), metal (24.0%) and mud container (4.0%) are being used in the residence of the 280 users of the solid waste dustbin made up of different materials. This implies that the habit of using dustbin inside the homes of women respondents has picked up, which reflects the attitudes of proper disposal of household solid waste among the women. This analysis bears relevance to the theory of planned behavior.

The Table II reveals that only 26.4 per cent of the respondents segregate the bio-degradable and nondegradable waste and use separate dustbin for keeping the waste to be disposed. The dustbin used for keeping the waste by the users are Plastic container (31.0%), Polyethylene cover (21.6%), Metal vessel (20.3%), Bamboo basket (19.0%) and Mud container (8.1%) in the descending order of importance. It reveals that among the 280 users of dustbin, only 74 users segregate their waste. This indicates that more awareness needs to be created among the users of dustbin and also non users regarding the importance of segregating the waste at the source.

TABLE II FREQUENCY DISTRIBUTION OF WOMEN RESPONDENTS BY USE OF SEPARATE DUSTBIN FOR DEGRADABLE AND NON-DEGRADABLE HOUSEHOLD SOLID WASTE AND TYPES OF DUSTBIN

Variable	Frequency	Percent
Use of Separate dustbin for degradable and non- degradable household solid waste		
Yes	74	26.4
No	206	73.6
Total	280	100.0
Types of dustbin (Users)		
Plastic	23	31.0
Polythene cover	16	21.6
Metal	15	20.3
Bamboo	14	19.0
Mud container	6	8.1
Total	74	100.0

Source: Field data

The Table III shows that all the women respondents of the non-users of dustbin are habituated to dispose of their household solid waste by burning the solid waste in the street (100%) followed by using the street container (89%), thrown outside the house in the street (86.4%), thrown into pit in the street (68.1%) and thrown into drainage (57.6%). So, the Table reveals that burning the household solid waste is done by all the women respondents of the non-users of the dustbin followed by using the street container and throwing the solid waste out in the street.

TABLE III FREQUENCY DISTRIBUTION OF WOMEN RESPONDENTS BY NON-USERS OF DUSTBIN FOR DISPOSING OF HOUSEHOLD SOLID WASTE

Variable	Frequency	Percent
Dispose of household solid waste		
Thrown outside the house in the street	140	88.0
Burning the solid waste in the street	135	85.0
Thrown into drainage	125	69.0
Thrown into pit in the street	120	75.0
Using the street container	110	69.0
	N=159	100.0 *

Source: Field data\*Multiple answers

TABLE IV FREQUENCY DISTRIBUTION OF WOMEN RESPONDENTS BY THEIR RESPONSES REGARDING THE HOUSEHOLD SOLID WASTE FOUND OUTSIDE THEIR HOMES

Variable	Frequency	Per cent
Responses on household solid waste found outside their houses		
Inform the non-officials (elected representatives) to take action	430	98.0
Inform the village officials (Panchayat clerk, Sanitary inspector) for proper cleaning	420	95.7
Present the matter in the gramasabha meeting when it is convened	415	94.5
Inform the sanitary workers for proper disposal	410	93.4
Trying to remove waste by self	405	92.2
Encourage the students and non students youth to look into this matter	400	91.1
Burning the household solid waste	191	43.5
	N=439	100.0*

Source: Field data\*Multiple answers

Thus, the Table concludes that the women respondents of non-users of dustbin do not have awareness in the proper disposal of household solid waste, which results in environmental warming and serious health problems. So, the Table III implies that the awareness programs are to be conducted especially for rural women in getting them acquainted with proper disposal of household solid waste.

From the table IV Out of the total women respondents, 98 per cent of them state that they will inform the non-officials (elected representatives) to take action for cleaning the street followed by inform the village officials (95.7%), present the matter in the gramasabha meeting when it is convened (94.5%), inform the sanitary workers for proper cleaning (93.4%), trying to remove waste by self (92.2%) encourage the students and non-students youth to look into this matter (91.1%) and burning the household solid waste (43.5%). This analysis corresponds with planned behavior theory.

#### IV. CONCLUSION

The study reports that 45.3 per cent of the rural women generate below three kilograms of household solid waste in their home per week. Concerning the major components of household solid waste is kitchen waste (45.8 %) in the study area. Best parts (63.8 %) of the rural women use dustbin for collecting their domestic solid waste. Among the dustbin users, most of them (39 %) keep plastic dustbin in their home. It indicates their attitude of proper household waste disposing method. The study also reveals that only thirty one per cent of women know about composting and its benefits. It indicates that there is a need for concerned officials and non-officials to engage residents of rural areas to create awareness about composting of bio-degradable waste. Regarding the responses on household solid waste found outside their houses, a high proportion (98%) of the

respondents state that they will inform the non-officials (elected representatives) to take proper action for cleaning the street. About the suggestions with regard to payment of fee for the purpose of household solid waste collection, a great number (100%) of the rural women respondents suggest that nominal fee may be fixed for the purpose of disposal of household solid waste. It shows their attitude in involving proper household solid waste collection and disposal. Finally, the study shows that the selected women in the study area report that they will abide by the measures taken towards making the environment free from waste thereby taking care of the health of all people in the study area.

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