

# **AN ASSESSMENT OF ETHICAL CONSIDERATIONS IN HOUSEHOLD WASTE MANAGEMENT: A CASE OF JAIPUR CITY**

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## **ABSTRACT**

The ancient Indian texts emphasize the existence of a harmonious relationship between human beings and other creatures on the earth. It is important to understand these intricate relationships and promote holistic development of all species on earth. The waste streams generated through individual households is also an aspect which holds its roots in the Indian ethos. The tremendous amount of waste generation has resulted into excessive pressure on the waste sink. This capacity has reached its peak in today's world in most of the nations. The time has come when we need to question the values of our society and the direction which we have taken to meet sustainable development. The present study identifies this gap with special reference to the waste management practices adopted by various households in smart city Jaipur. The study also evaluates significant outcomes of the implicational process of waste management in households manifesting in the integrated waste management process adopted in the city of Jaipur. The sample size of 390 respondents was evaluated for the purpose of study. Random method of sampling was used and correlational analysis was performed. The correlation analysis reveal a significant positive relationship between environmental awareness and environmental attitude (.721). The relationship between household waste and environmental attitude was also on the higher end. The relationship between environmental attitude however was only moderately correlated (.456) with household waste separation. This suggests that initiatives should be taken to translate these environmental attitudes to household waste separation behavior.

## **1. INTRODUCTION**

Most of the ancient literature available today emphasizes two important aspects of ethics in man's life: The first relates to about the existence of an intricate relationship among man and his surrounding environment. The second aspect relates to the existence of a harmonious relationship among all beings (1). This promotes symbiotic relationships and balance among the various elements of nature. Deep ecologists believe that the community of all living species is the greater reality and has greater value. Today the modern education system is promoting a dependent society which not only fails to identify its roots in the natural system around it but also finds it's hard to survive with other communities. This has resulted in the development of human beings who have failed to realize the importance of a holistic development of the earth's environment. Municipal waste generation was listed among the "red light" pressures on the environment, i.e. problems that need to be addressed urgently by the OECD Environment Outlook 2020 (2). The waste sink capacity is the capacity of the environment to assimilate the waste products of production and consumption and convert it into ecologically useful products. This capacity has reached its peak in today's world in most of the nations. The time has come when we need to question

the values of our society and the direction which we have taken to meet sustainable development. The present study identifies this gap with special reference to the waste management practices adopted by various households in smart city Jaipur. The study also evaluates significant outcomes of the implicational process of waste management in households manifesting in the integrated waste management process adopted in the city of Jaipur.

## 2. REVIEW OF LITERATURE

Industrial and commercial development of the last couple of centuries aimed to create an economic and technological 'underworld' for consumers, but instead it created a 'waste world', leading to the physical and spiritual deprivation of mankind as well as the world as a whole. Industrial control of the media not only created an illusion of affluence and economic growth, but now is threatening the viability of humans (3). Both households and firms extract from the natural resource sector and both create waste in the course of production and consumption which is passed on to the disposal sector. The main problem here is that as the level of economic activity and population keep on growing, which was highly conspicuous at the time when Boulding formed his ideas, both scarcity and waste problems will get worse unless drastic measures are taken(4).

These ideas by Boulding (5,6) were stated long back but the central theme is that resource consumption should be reduced and resource base must be preserved to ensure the long term survival of human species on the earth.. Our separation from nature has created a trauma by failing to satisfy the most basic human needs. The result is widespread addiction to consumerism and drug dependency. Recovery will first of all require a renewed sense of affinity with nature.

Developing countries with the burgeoning population problems have been unable to cope with the increasing amounts of waste generated by its residents. In India the quantum of waste generation in 2025, is expected to double the amount generated in 1997(7). The Municipal solid waste management and Handling Rules define the responsibility of the generator to segregate the waste. Inculcating habit of waste segregation at source is an enormous challenge due to poor education and consciousness towards it. Mixed waste not only increases the cost of processing but also reduces waste recovery and cost recovery (8).

Lack of segregation deprive proper scientific disposal of waste(9). Ecological awareness and citizen participation to segregate waste at source, door to door collection and disposal in appropriate collecting bin is imperative(10). Public private partnership has become a necessity to effectively manage the waste streams. The effectiveness of partnership, well defined relationship and clear demarcation of role, accountability and adoptability due to dynamics among the various stakeholders are elementary necessities to make public private partnership work for municipal solid waste management (11). Social norms have been found to have a profound influence on the habits of the residents in a particular place (12,13,14).

Thus ethical considerations play an important role in waste management at the household level. Hence residents should recognize their role as an important pillar to effective waste management structure.

## Research Model

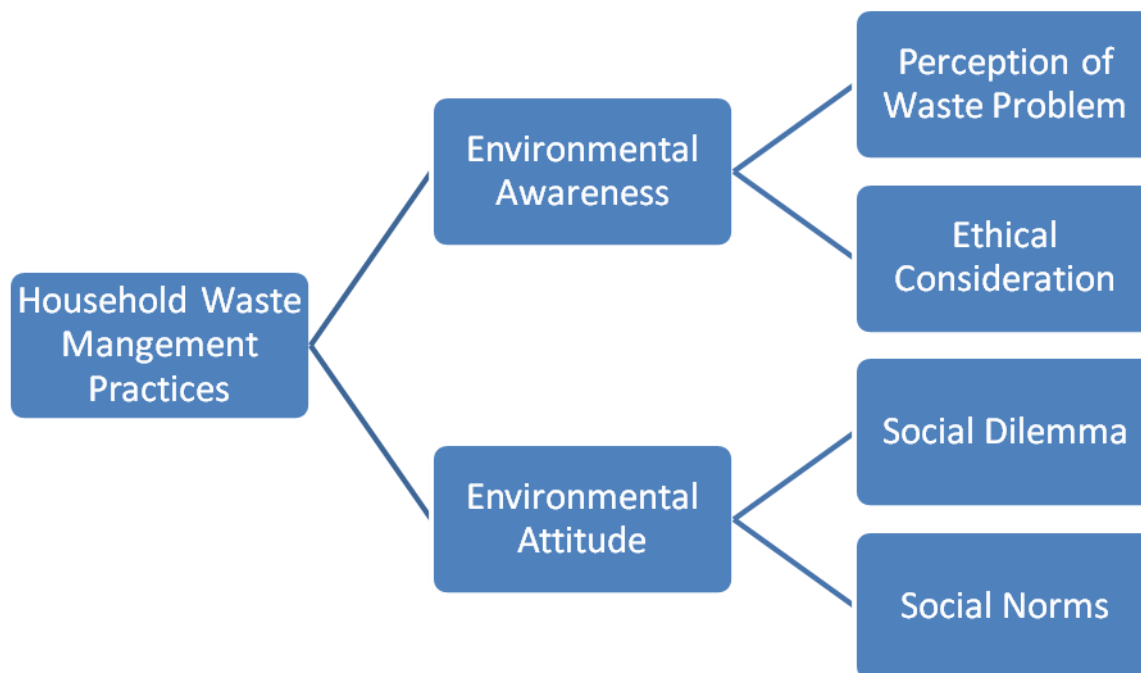


Figure1

## RESEARCH METHODOLOGY

The research primarily rests on the assumption that environmental awareness and attitudes have a considerable impact on the household waste management practices. Environmental attitudes are again affected by the social dilemma and social norms surrounding the members of household. Environmental awareness is affected by perception of waste problem and ethical considerations which rest with the generator. The demographic variables were the moderating variables for the study.

The study is primarily exploratory in nature and identifies the behavioral aspects pertaining to moral norms of the households in Jaipur city towards waste management. The sampling tool was a questionnaire which had both open and closed ended questions and possessed a 5 point likert scale to identify the degree of agreeableness with the given statements. At 95% confidence level and 5% confidence interval with a population of 30 lakhs the sample size calculated was 384. Hence the sample size for the study was taken to be 390 and was identified through stratified random sampling method.

## DATA ANALYSIS

The demographic factors included the age, education, income level, household type which were included as moderating variables for the study purpose. The study reveals that 40% of the sample was in the age bracket 25-30 and 18% between 31-35, 20% from 36-40 and the rest were above 41 years of age. The income level for 26% of the respondents were between 10,001-25,000. 35% had a income level between 25001-35,000, 26% between 35001-45,000 and the remaining were above 45,001. The household type for

the study was primarily individual household (43%) and Apartments(23%) and G+2 was 22% and 12% were villas.

The initial aspect of the questionnaire dealt with perception of the waste problem in locality.89% of the respondents suggested that they were aware of the waste management problem in their locality. The remaining 11% were not very agreeable with the waste problem in their locality.

When respondents were asked as to how important it is for them to know what happens to their waste, 247(63.3%) respondents said it was very important, 89(22.8%) that it was fairly important, 10% opined “not very important” and 4% responded “not at all important” . This shows that most respondents do care about what happens to their waste but they were unaware of the final place as to where the waste landed in the city. Another aspect mentioned in the literature as an important determinant of waste behavior is the responsibility felt for one’s waste. It was found that most of the respondents felt responsible for managing their own waste, although majority also thought that it is the responsibility of Nagar Nigam Jaipur to collect the waste and segregate it also.

Because convenience (considering household segregation) was also found to influence waste segregation, and 54% of the respondents said that they segregate kitchen waste but the waste is mixed by the Nigam workers. It becomes obvious that social-psychological incentives cannot succeed alone, but need to be supplemented with measures that would make waste segregation more available to the residents (as also suggested by Hage and Milea(14,15).The ethical considerations of feeding the remaining food to animals like stray dogs and cows also dominated the residents mindset.

The next aspect of environmental attitudes was also investigated during the study. The social dilemma of following the Swachh Bharat Abhiyan of the government was also found to be an important precursor for residents (67%) following the norms of not littering on the roadsides and near their homes. The remaining stated that it has become an important aspect of their everyday life but they it might take some more time to modify their habits. Respondents also stated (78%) that since Nagar Nigam is having a system of door to door collection hence having a clean neighborhood has become more important than earlier days.

Variable	Mean	SE Mean	StDev	Minimum	Maximum
Environmental Aw	3.190	0.298	1.365	1.000	5.000
Environmental At	3.238	0.344	1.578	1.000	5.000
Household Waste	3.000	0.293	1.342	1.000	5.000

Table:1 Descriptive Statistics

	Environmental Awareness	Environmental Attitude	Household Waste
Environmental Awareness	1		
Environmental Attitude	.721	1	
Household Waste	.628	.456	1

Table: 2 Correlation Analysis

The correlation analysis reveal a significant positive relationship between environmental awareness and environmental attitude (.721).The relationship between household waste and environmental attitude was

also on the higher end. The relationship between environmental attitude however was only moderately correlated (.456) with household waste separation. This suggests that initiatives should be taken to translate these environmental attitudes to household waste separation behavior.

## CONCLUSION

Ethical aspects of waste management are deep rooted in the Indian Philosophy. These ethical considerations also play a very important role in household waste management today. Perception of waste problem and ethical considerations form an important aspect of the environmental awareness component and social dilemma and social norms are significantly related to environmental attitudes of residents. The results of the study also suggest that both environmental awareness and environmental attitudes play a significant role in household waste management practices. The policy inclusions should hence incorporate aspects of increasing environmental awareness among residents. This can then be translated into effective segregation practices at the household level and increase the diversion rates of the waste which is currently being transported to the open dumpsite outside the city.

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