

WILLINGNESS TO RECYCLE AS A WASTE DISPOSAL METHOD IN SELECT AREAS OF SOUTH GOA**Charmaine D'souza**

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ABSTRACT

Re-purposing household trash is a good way to reduce waste. Recycling is the third component of reduce, reuse and recycle waste hierarchy. Material-recovery sorting takes the concept of recycling to a whole new level, wherein much of it is recovered for reprocessing. In the rural area of south Goa the characteristics of domestic waste which includes specifically the recycling aspect willingness, were studied by questionnaire. Only a few people consider this as an industry like recycling and reusing, and use the benefits. Recycling needs minimal energy for complete processing and utilization and the end product is a renewable source of energy which is eco-friendly. A survey was conducted covering 200 respondents in Salcete taluka, the places selected were Fartoda, Colva, Navelim, Cuncolim and Chinchinim, to analyse whether the respondents responsibly take care of waste generated at their homes by either recycling or reusing or both. The respondents of each locality were asked if they are interested in willingness to recycle, willingness to separate materials, willingness to pay for recycling pick up, willingness to return plastic bottles, and willingness to pay extra money to purchase recyclable products according to their education level. The hypotheses formulated for the study was to test whether there is a significant difference of respondents' responses towards the willingness to recycle waste. Anova and Least Significant Difference (LSD) including percentage analysis, tabulation tools was also used.

Keywords: reuse, waste material, waste disposal, willingness to recycle

INTRODUCTION

Recovery or recycling of resources is the process of taking useful but discarded items for next use and processing and cleaning them before they are recycled. It would reduce energy loss, consuming new materials and reducing landfills [1]. Contributing to Swachh Bharat Abhiyan in making a small difference towards waste disposal is to adopt the 3 R's - Reduce Reuse and Recycle. If waste generation is not reduced the landfills that are loaded in India with waste will increase from 62 million tonnes to 165 million tones [2]. 'Dumping' of waste is not the solution as is used as an attempt of reducing waste generation Prof. Sudhakar Yadla (Indira Gandhi Institute of Development Research, Mumbai,) and Ms. N.T. Sindhu (Cochin University of Technology, Kochi,) have made an assessment of the alternative ways of disposing waste [3]. Along with organic wastes other products like grasses or vegetable remains if added in the right proportions form vermicompost, which is excellent manure. This is one of the best examples of waste management recycling [4]. The most common recyclable items are paper, plastic, glass and aluminium. Recycling bins are available for office, public or home use, to collect recyclables before they are taken to recycling centres [5]. Many non-hazardous industrial wastes such as paper, glass, cardboard, plastics and scrap metals can be recycled [6].

THEORETICAL PERSPECTIVE

Recycling old materials like, bags, reusing second hand items, repairing broken items, avoiding disposable products like plastic bags, jars, and purchasing items that use less designing would reduce waste. Recycling is used around the world, with plastic, paper and metal leading the list of the most items recyclable [7]. Recycling organic matter forms mulch or compost for landscaping and agricultural purposes and the waste gas, collected from the process, is used for electricity production. Biological reprocessing controls and speeds up the natural decomposition of organic matter [8]. Products such as LDEP, PVC, PS, and PP are recyclable however, there are complex products that are not that easy to recycle and because of the complexity of recycling biological reprocessing exists. This is useful for waste materials that are organic in nature where the waste materials are put in biological decomposition and then later recycled to form composts for agricultural purposes [9]. Sewage sludge which is also called bio solids is not generally considered solid waste, but it is sometimes composted with organic municipal solid waste [10]. Materials like aluminium, copper, steel, plastics are high in demand for industrial production, which calls for making a sorting of waste for recycling viable [11]. Communities could participate in waste inventory know the types and volume of hazardous, household and recyclable wastes generated and the need segregation, waste reduction and recycling required. The process of local waste disposal could also be explored to inform waste practices and the initiation of a composing way to promote waste reduction which could be implemented [12]. No matter where you're shopping, carry own reusable cloth bags instead of accepting plastic bags from the store [13].

REVIEW OF LITERATURE

Waste management has become a major concern and has significant implications for the health of residents, municipal staff, industrial workers and overall urban investment climate. (Raghav Chandra) It is estimated that residential waste accounts for 45% of the municipal waste stream(Mathew, 1999). Waste collection strategies can significantly affect recycling targets (Passarini et al., 2011). Recycling of waste is a new concept for rural residents, but it has been readily adopted without too much need for raising awareness (Chung and Poon, 2001). Theoretical orientations can be identified in applied behavioural analysis literature which deals with recycling (Mannetti, Pierro, &Livi, 2004). Literature focuses on specific attitudes towards recycling (e.g., Ebreo, Hershey, & Vining, 1999).To summarize key findings of the behavioural literature on household recyclables (glass, metals, paper, and plastics) Oskamp et al. (1998) and Guerin, Crete, and Mercier (2001) find small but significant statistical relationships between environmental concerns and recycling. Contributors to this research includeSGuagnano, Oskamp (1995), Stern, and Dietz (1995), Corral-Verdugo (1997), Taylor and Todd (1995), Cheung, Chan and Wong (1999), Werner and Makela (1998), and McCarty and Shrum (2001). Convenience, and costs, significantly impact recycling behaviour (Jenkins et al., 2003). This also includes the nearness of recycling containers (Ludwig, Gray, & Rowell, 1998; Margai, 1997), available storage space and the difficulty of recycling some materials (Sterner & Bartelings 1999). Jakus, Tiller, and Park (1997) for rural households stressed time commitment in recycling participation. Schultz, Oskamp, and Mainieri (1995) report that women appear more likely to recycle. More education contributes to recycling (Owens, Dickerson, & Macintosh, 2000.McQuaid and Murdoch (1996) find some weak evidence that household size is positively associated with recycling behaviour.Scott, (1999) studied the association between recycling behaviours and differences of gender, age, education level, family income, or political ideology.

OBJECTIVE OF THE STUDY

To find out the willingness to recycle, willingness to separate materials,willingness to pay for recycling pick up, willingness to return plastic bottles, willingness to pay extra.

STATEMENT OF THE PROBLEM

It would be worthwhile to know domestic waste management behaviour, current situation of the willingness, collection, and transfer, residents’ mode of domestic waste collection and treatment and disposal of domestic waste.

HYPOTHESES

The below mentioned hypotheses is formulated for the study:

Ha1: There is a significant difference of respondents’ responses towards the willingness to recycle waste

SAMPLE SIZE

For collection of primary data asurvey was conducted covering 200 respondents in Salcetaluka using a structure questionnaire, the places selected were Colva, Fartoda, Navelim, Cuncolim and Chinchinim, to analysis whether the respondents responsibly take care of waste generated at their homes by either recycling or reusing or both. The respondents were also evaluated for their concern for the environment and mode of domestic waste collection and treatment

STATISTICAL TOOL

The statistical tool used in data analysis and interpretation were Anova and Least Significant Difference (LSD) including percentage analysis, tabulation tools was also used.

LIMITATIONS OF THE STUDY

Only South-Goa respondents were taken for the study.The sample is comparatively small in size.There was difficulty of accessibility of the householdmembers. The survey did not obtain the determined sample size, due to the fact that some urban dwellers refused to participate in the survey.

Table-1.1: The willingness to recycle

		Greatly interested	Yes	No opinion	no	Not interested
Willingness to recycle	Below SSC	2	20	22	18	8
	SCC	4	28	6	18	6
	HSCC	8	24	4	6	4
	graduate	6	10	2	4	0
Willingness to seperate materials	Below SSC	2	56	2	8	2
	SCC	8	34	4	16	0
	HSCC	2	40	0	4	0

CHARMAINE

Willingness to pay for recycling pick up	graduate	6	16	0	0	0
	Below SSC	2	42	12	12	2
	SCC	0	48	4	10	0
	HSCC	6	34	0	6	0
Willingness to return plastic bottles	graduate	6	12	0	0	4
	Below SSC	0	42	10	16	2
	SCC	2	46	2	12	0
	HSCC	6	28	2	10	0
Willingness to pay extra	graduate	6	16	0	0	0
	Below SSC	2	22	8	32	6
	SCC	4	28	0	30	0
	HSCC	4	28	2	10	2
	graduate	6	10	2	4	0

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	10122.8	4	2530.7	42.05144	2.98E-20	2.467494
Within Groups	5717.2	95	60.18105			
Total	15840	99				

LSD

column	column	Mean Difference (I-J)	Sig.	
1	2	-49.20000*	0	there is significant difference
	3	-0.4	0.943	there is no significant difference
	4	-13.80000*	0.02	there is significant difference
	5	5.4	0.336	there is no significant difference
2	3	48.80000*	0	there is significant difference
	4	35.40000*	0	there is significant difference
	5	54.60000*	0	there is significant difference
3	4	-13.40000*	0.024	there is significant difference
	5	5.8	0.303	there is no significant difference
4	5	19.20000*	0.002	there is significant difference

* The mean difference is significant at the 0.05 level.

H1: there is a significant difference in willingness to recycle

The respondents of each locality were asked their willingness to participate in recycling waste, when they were asked their willingness to recycling their response were 39% said yes, 24% said no, 18% said no opinion, 12% said that they are greatly interested and only 7% said that they are not interested, when asked about willing to separate material for collection their respond 72% said yes, 14% said no, 10% said greatly interested, 3% said no opinion, 1% said not interested, when it came willingness to pay for pickup for recycling materials 67% said yes, 14% said no, 9% said no opinion, 7% said that they are greatly interested and only 3% said that they are not interested, as for willingness to return plastic bottles to stores their response were 65% said yes, 19% said no, 9% said no opinion, 6% said that they are greatly interested and only 1% said that they are not interested, when asked about Would you be ready to pay extra money to purchase recyclable products their response were 45% said yes, 40% said no, 5% said no opinion, 7% said that they are greatly interested and only 3% said that they are not interested. Overall 41% said yes, 16% said no, 6% said no opinion, 6% said greatly interested and 2% greatly not interested.

CONCLUSION

Now many companies are looking forward to associate themselves with this industry and are ready for a long term investment. As the population continues to grow, it is expected that by the year 2047, the waste generated would be at least 5 times the current numbers. Recycling involves the reprocessing of wastes, either into the same product or a different one. Materials put into a recycling bin get a new purpose after being processed and turned into new or similar products. The following factors can be considered to promote recycling activities -A waste management system can be properly planned, infrastructure including collection, transportation, treatment, and disposal of waste could be enhanced and improved, the public and communities could practice in

recycling activities, Subsidies or tax privileges can be provided to recyclers or recycling companies, environmental education could be enhanced so members of the public learn how and why to separate waste. Classified collection plays an important role in domestic waste management so, it should be promoted widely on a household and village basis. Domestic waste mixed is suitable for treatment and disposal in simplified landfills or the existing landfills, while the organic waste can be composted or fermented to produce energy and fertilizer. Instead of throwing plastic bottles use them to decorate the house and make other DIY showpieces. Items that can be refilled like printer cartridges or glue, and reuse plastic folders could be used. Use old wood and pallets to build compost bins. Reuse toiletries like shampoo bottles as cell charging stations, old toothbrushes as cleaning tools. Old clothes and scraps of fabric can be donated to a fabric recycling facility. Schools often accept donations of old computers and other electronics. Contact with a, thrift store, or donation centre to see about donating furniture, electronics, cars, and any other items finished using.

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