

Investigation of Electronic Waste and its Management

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ABSTRACT

As per present scenario in India of e-waste generation, currently 4.1 million tonnes e-waste is generated and that is to reach 8 million tonnes by 2025 is expected. Proper disposal of e-waste to manage and to control the generation of e-waste there is a need to take serious action and for its proper management, to evaluate some existing system on generation of e-waste for proper solution. E-waste or WEEE need to address this increasing generation of e-waste.

This paper investigate on management of electronic waste (e-waste), roles of NGOs and Government officials and its contribution in proper management of e-waste to control on generation of e-waste.

Keywords: E-waste, Electronic, NGO, Management

1. INTRODUCTION

Electronic waste (E-waste) is called to electronic devices those are at their end of the life, electronic devices includes: Mobile Phones, Television set, Refrigerator, Air Conditioner, Monitors, Laptops, Printers etc. and old electronic devices those are not working, unused are known as e-waste.

Rapid growth in technology with advanced features causes increase in electronic waste generation. Electronic Waste has been become speedily increasing waste stream. Though, it is having toxic material which is harmful for human being and environment.

History of e-waste generally started in mid 70. [5]. The First step taken was Conservation and Recovery Act (RCRA) by the U.S. government. towards organising e-waste, which was sanctioned in 1976.[4]

This action is controlled less in developed countries for the illegal dumping of e-waste. At this point, the rest of the world was just initial to hold the significances of such waste on their land [4 & 5].

Electronic waste disposal properly has become an issue which has significances dangerous beyond the limitation of local environment. Everybody should know the toxic material are there in an old electronic gadgets, so dumping e-waste into landfill or in water then the things will be terrible.

Kurian Joseph [1] is presenting electronic waste management in India and its strategies. In India undergoes from number of problems Electronic waste management like the difficulty in inventorisation unhealthy circumstances of informal recycling. To address the critical issues Inappropriate regulation, poor awareness and. To escape the known opposing effects on the environment and human health the toxic materials enter the waste creek with no discrete safeguards and are dumped or resources are wasted when economically prized material, the informal recycling unhealthy are developed during. In the light of inventiveness in India this paper highlights the issues related on emerging problems. This paper is presenting the e-waste management system and recycling of electronic waste between the manufacturers, traders, assemblers, and recyclers. Concluding this author is suggesting that there is an urgent need to assess the current and the future scenario on management of e-waste. There is a urgent need to establish the e-waste collection centers, transportation and treatment, storages at national and at regional level. Facilities should be modeled those employing environmentally sound technologies and methods should be implemented for recycling and recovery of materials. Take back offer should be provided and the cost of which should be implemented at the time of designing product and that product should also contain less toxics.

Sushant B. Wat [2] presented in his paper about India scenario of the e-waste and its management and also implication of e-waste. The environment and affect human health if not properly managed them have shown that e-waste may negatively impact as contains many hazardous constituents. Numerous organizations and government of many countries have accepted and or approaches for e-waste management, developed the environmentally sound option to tackle e-waste to environment and human health of the ever growing threat. This paper is presenting Indian e-waste scenarios, composition and global and also prospects of recyclable, recoverable, and hazardous material in e-waste. Recovery and their environment the best practice is recycling.

To concluding this paper the authors are stating that the option for recycling and recovery are outdated and hazardous those are causing hazards for environment and for human being in India. There is a big difference between European model and in recycling e-waste and management of e-waste in India. Consumer has to pay for disposal of their e-waste and it is not free of cost while returning those for recycling, unlike European e-waste system. Consumer is expecting payment on return of unused electronic items.

Dr Devendra S Verma and Shekhal Agarwal [3] paper focus on in India the condition of e-waste, methods used for e-waste management and the legislation work done regarding e-waste in India the problem associated with e-waste focuses on. To change in lifestyle of people which is more depend on electrical and electronic equipment India faces problem of e-waste continuously due. This has arises big problem on management of e-waste. And serious problem is major part of e-waste is managed by informal sectors which has bad effects on our environment. There are very few large scale organized sector for recycling of e-waste. Because of in people about e-waste lack of awareness, the measures like ERP and. The legislation work regarding e-waste is not performing well. Therefore, awareness in people should be increased and rules should be followed and controlled properly.

2. SURVEY METHOD

Two major methods are there of collecting information for any purpose. It is the source of primary and secondary of information. Based on two approaches data are categorized to information gathering as:

- Survey based data
- Secondary data

Survey Based Data

Through various methods survey based data is the data which is collected like Interviews, telephone surveys, questionnaires and through email which covers geographical area as data collected globally which includes large population.

Secondary Data

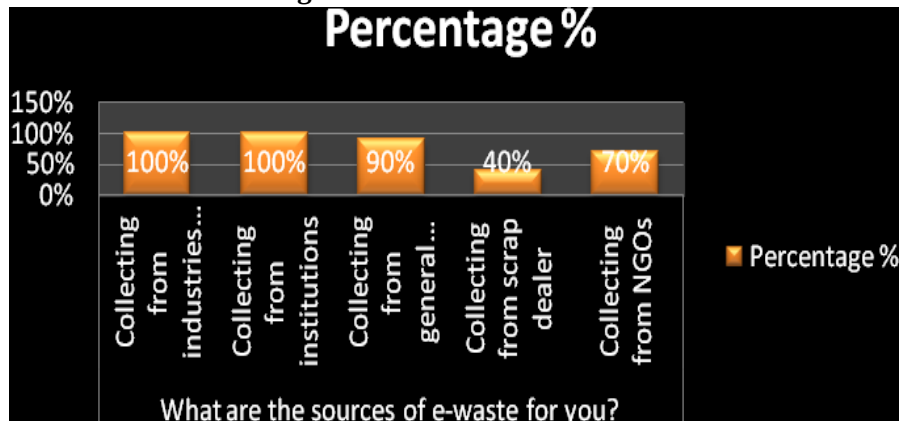
From research papers, articles, books secondary data are the data collected available in written, typed or in electronic forms. To gain initial insight secondary data is also used into the research problem. In India to find the existing system of e-waste management and to study research papers, articles are news problems on management of e-waste was essential.

3.1 Analysis on Organization Level

Table: 3.1 - Source of E-waste

		Percentage %
What are the e-waste sources of for you?	Collecting from industries/companies	100%
	Collecting from institutions	100%
	Collecting from general public	90%
	Collecting from scrap dealer	40%
	Collecting from NGOs	70%

Figure: 3.1-Source of E-Waste



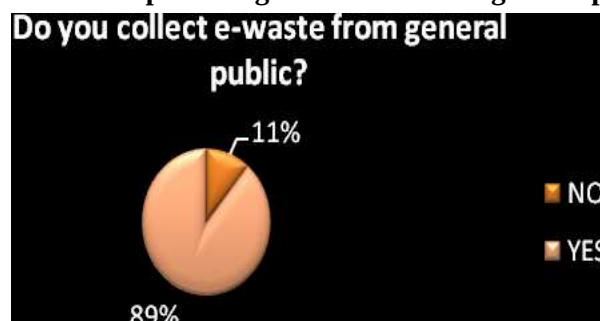
In the above table 3.1 it is found that 100% organizations are collecting e-waste from industries/companies. 100% organizations are also collecting e-waste from institutions. 90% organizations are collecting e-waste from general public. Only 40% organizations are collecting e-waste from scrap dealer. And 70% organizations are collecting e-waste from NGOs.

It could be seen that 100% e-waste is collected from industries, companies and from institutes. But very less is collected from scrap dealer. There is a lack of management in collection of e-waste.

Table: 3.2 - % of e-waste from general public

Do you collect e-waste from general public?	Percentage %	
	NO	11%
	YES	89%

Figure: 3.2 - % percentage of e-waste from general public

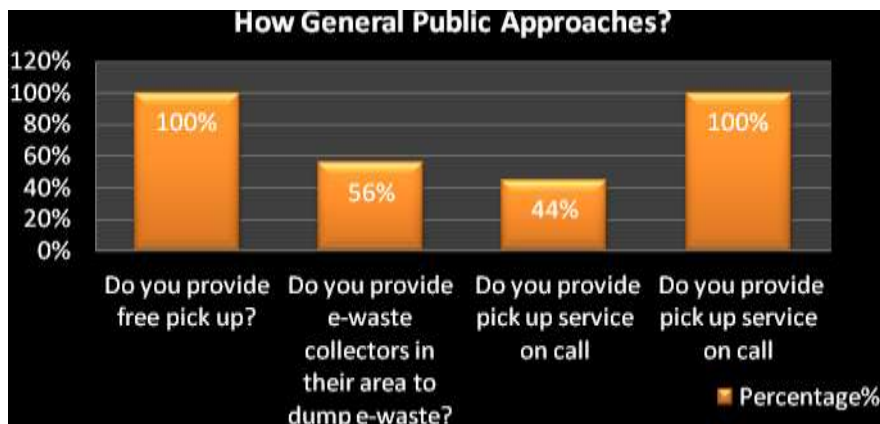


In the above figure 3.2 is checked that if firms are collecting e-waste from general public and it is found that 89% organizations are accepting that they collect e-waste from general public and 11% organizations saying they do not collect e-waste from general public.

Table: 3.3 - How general public approaches?

If yes to above question, then how general public approach you?	Percentage%	
	Do you provide free pick up?	100%
	Do you provide e-waste collectors in their area to dump e-waste?	56%
	Do you provide any offers on unused gadgets?	44%
	Do you provide pick up service on call	100%

Figure: 3.3-How General Public approaches?



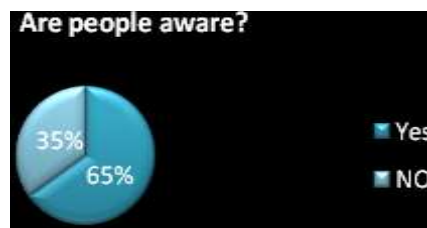
In the above figure 3.3 it is checked from organization that if e-waste is collected from general public then how general public approaches to them. Few options were given to check their approaches towards e-waste collection. And as per above data it is found that 100% organizations are giving free pick up to collect e-waste. 56% organizations are providing e-waste collectors in their area to dump e-waste. 44% organizations are providing offers on unused gadgets, and 100% organizations are providing pick up service on call.

1.2 Analysis on NGOs Level

Table: 3.4 - awareness about e-waste hazardous

		Percentage%
Are people aware about e-waste hazardous	Yes	65%
	NO	35%

Figure: 3.4-awareness about e-waste Hazardous

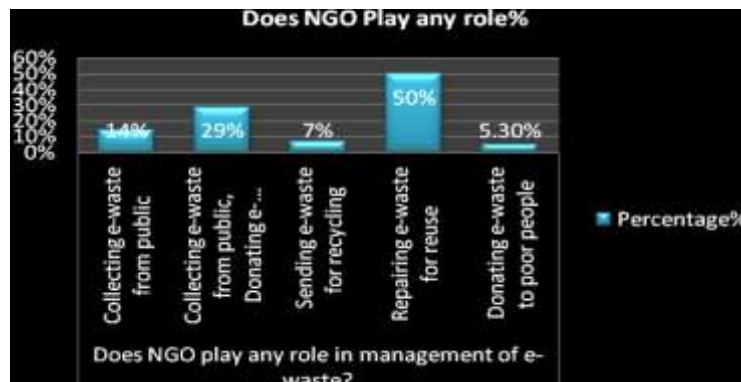


In the above table 3.4 it is checked with NGOs that whether they know that people are aware about e-waste hazardous and as per above table it is found that 65% NGOs are knowing that people are aware and 35% NGOs do not know.

Table: 3.5- Does NGOs play any role

		Percentage%
Does NGO play any role in management of e-waste?	Collecting e-waste from public	14%
	Sending e-waste for recycling	29%
	Repairing e-waste for reuse	7%
	Donating e-waste to poor people	50%

Figure 3.5- Does NGO play any role.



In the above table it is found that 14% NGOs collecting e-waste from public, 29% NGOs sending e-waste for recycling. 7% are repairing e-waste for reuse. And 50% are repairing e-waste or reuse.

Table: 3.6- Do you send e-waste to authorized dealer

Do you send e-waste to authorized dealer or to any informal dealer?	Percentage%	
	NO	75%
	YES	25%

Figure: 3.6– Do you send e-waste to authorized dealer

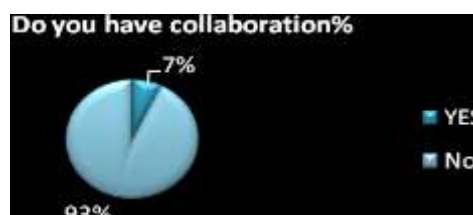


In the above table 3.6 it is analyzed that whether NGOs sending e-waste to authorized dealer or to any informal dealer and found that 75% not sending to authorized dealer and only 25% sending.

Table: 3.7- collaboration with authorized dealer

Do you have collaboration with authorized dealers to manage e-waste?	Percentage%	
	YES	7%
	No	93%

Figure: 3.7-collaboration with authorized dealer



In the above table 3.7 it is found that 93% NGOs do not have collaboration with authorized dealers to manage e-waste and only 7% NGOs have collaboration with authorized dealers.

4. CONCLUSION

As per investigation, it is shows that less percent of e-waste is collected from scrap dealer and NGOs. No proper e-waste management for safe disposal.

93% NGOs do not have collaboration with authorized dealers to manage e-waste it may be due to lack of awareness. Hence, it shows lack of awareness and lack of Management.

There could be e-waste collectors in the areas where general people can dump their e-waste in nearby. NGOs can have collaboration with authorized dealer where they can send collected e-waste for proper disposal.

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