

A STUDY ON ATTITUDE OF WOMEN TOWARDS MANAGEMENT OF E-WASTE

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Abstract

The developments in technology have paved the way for almost every segment of the world. Robotics, Internet of things, Artificial intelligence combined with advancements in hardware has led to introduction of many new devices in the world of gadgets. Consumers also resort to more upgraded electronic equipment. But the concern is that as consumers switch over to an upgraded version of a device before the old device complete its lifespan, so the quantity of electronic waste has been increasing not just in India but across the world. When we talk of purchases made by members of a household, it is important to realise the attitude of consumers. Considering the attitude, it is also necessary to understand the preference and attitude of women as well. When the concept of management of electronic waste comes into light, it has been mentioned by various researchers that the major reason for growth of e-waste is that it is disposed off with regular household waste. And the 'lady of the house' has a major role to play in managing the waste of the house, hence the management of electronic waste at household level can be done by women. With the same thought, this paper has been compiled to study the attitude of women towards management of e-waste.

Keywords: Awareness, E-waste, Electronic Waste Management

• **Introduction**

The technological advancements have also led to increasing rate of electronic waste in the nation. E-waste comprises of any electrical or electronic items discarded by the owner without any intent of reuse. Management of e-waste has been a concern not just for India but for the entire world. As per the ASSOCHAM-EY report India's production of e-waste was likely to increase by 5.2 million metric tons by the end of 2020 from 2 million metric tons in 2016. The concern is that improper disposal of e-waste will aggravate lot of health and environmental problems. In many parts of the country, e-waste is disposed of in landfills which ultimately affect the quality of ground water leading to soil and water

pollution. In addition to it, if e-waste is burnt in open space without any technical supervision, then the fumes released out of it will increase the levels of air pollution. Consequently, there is a dire need for the citizens of

the country to be proactive for dealing with the heaps of e-waste that is likely to generate in near future. Reduce, reuse, refuse, recycle are some of the strategies which can be adopted for dealing with the issue of E-waste.

- **Review of Literature**

Few researchers identified that one of the reasons for poor management of electronic waste is lack of awareness amongst consumers. In a study conducted in Maharashtra with a sample size of hundred respondents, it was found out that planned teaching programmes is an effective way to impart knowledge and to create awareness amongst students related to management of electronic waste (Ghorpade et al, 2020). In addition to the above-mentioned reason, another reason for poor e-waste management is that the disposal options are limited. An exploratory study conducted in Pakistan revealed that storage of obsolete items is a preferred option amongst respondents because of lack of suitable options for disposal of e-waste. In addition to it majority of the respondents were willing to pay an additional fee for recycling of e-waste if proper e-waste recycling system was set up in their respective areas (Shaikh et al., 2020).

Moreover, empirical evidences also suggested that demographic variables play a role in recycling behaviour of consumers. In a study conducted in Romania, it was found out that the demographic variables, such as age and gender, can have a contribution to predicting residents' pro-e-waste recycling behaviour. 532 valid responses were analysed for the purpose of the study using IBM SPSS. The researchers concluded that based on such findings, the policymakers can gain a better understanding of the e-waste recycling phenomenon and on its main triggers, with results in creating better policies for sustaining a proper e-waste managing system (Delcea et al., 2020).

Another dimension towards management of e-waste is that the revolution in Information Technology is a reason for growing heaps of e-waste and on the contrary somehow the same technological developments are being used for managing the crisis. In an article showing the management of E-waste in Malaysia, the use of IOT is revealed. A smart household e-waste collection box was designed, in which sensors were installed which measured the level of e-waste to keep a record of data of disposed items. Along with it a supporting server was developed which notifies and schedules e-waste collectors to dispatch and collect the e-waste when the volume of the collection box reaches a certain

threshold (Kang et al., 2020).

A review paper on electronic waste management gives a quick glimpse on the reasons and factors which are responsible for ineffective implementation of e-waste management. The factors are lack of green practices, inadequate infrastructure, lack of public awareness, lack of policies and regulations, lack of knowledge sharing, lack of extended producer responsibility (EPR), lack of funds for e-waste recycling, lack of CSR initiatives, growth of informal sector, lack of green practices(Gollakota, 2020).

- **Need of study:**

Although reports by Government of India and United Nations University suggest that e-waste is increasing at an alarming rate, but still stringent efforts have not been adopted in this area. On the basis of review, it has been identified that attitude plays a key role in management of e-waste in the nation. When the idea of management of e-waste comes into purview, it is imperative to understand that the attitude of consumers plays an important role. Specifically female consumers play a major role because one of the crucial problems identified with e-waste management is that it is discarded with regular household waste and an aware female can spread awareness in the entire household. Further there are no specific studies conducted in the state of Haryana with regards to management of e-waste.

- **Research Design:**

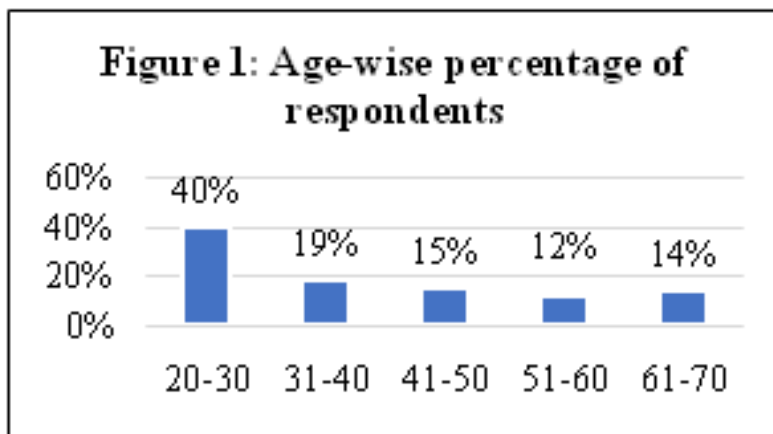
For the purpose of study, data has been gathered from female respondents in Ambala district using random sampling method. The sample size of the study has been 112. A self-administered questionnaire has been used for the purpose of data collection via Google Form. The questionnaire has been divided into two parts with the first consisting of questions related to demographic profile of the respondents and the second part of the questionnaire consists of questions related to attitude of women towards e-waste management. For the purpose of data analysis, Microsoft Excel has been used and basic analytical tools have been deployed.

- **Objectives:**

The primary objective of the study has been to identify the attitude of women towards generation and collection mechanism of electronic waste. The secondary objective of the research has been to study the awareness levels of consumers towards e-waste management.

- **Data analysis and findings:**

Figure 1 shows the age wise percentage of respondents. Majority respondents i.e. 40% respondents were between the age group of 20-30 years. Further 19% of the respondents belonged to the age group of 31-40 years, 15 % belonged to age group of 41-50 years and least percentage of respondent were from the age group of 51-60 years.



Further the demographic profile of respondents is also depicted in Table 1. Out of the total respondents, 79.5% were married and 20.5% were unmarried. Considering the education level, 75% were graduates, 11.6 % were post-graduates, 8.9% respondents were holding a professional degree and 4.5% respondents were doctorate. Further majority of the respondents have been homemakers being 32.1%. in addition to it 18.8% respondents were self-employed, 45.5 % respondents were employed for wages and 3.6% respondents were retired.

Figure 2 shows the frequency of replacing electronic equipment by female respondents. Maximum percentage of respondents i.e. 63.4 % of respondents replace their electronic equipment as needed, 20.5 % respondents replace their equipment every three months, 8.9% respondents replace their equipment after every 1-2 years and 2.7% respondents replace after every 2 to 3 years. Some responses were also gathered with regards to identify the reasons for discarding the electronic products. Maximum number of respondents mentioned that they discard electronic products after the product completes its lifespan. Other reasons for discarding electronic products have been 'functions insufficient as per requirement', 'fault in the device' and 'new products are cheaper' in order of responses of the consumers.

Table 1: Demographic profile of respondents		
Basis of categorisation	Count	Percentage
Age Group (in years)		
20-30	45	40.2%
31-40	21	18.8%
41-50	17	15.2%
51-60	13	11.6%
61-70	16	14.3%
Marital status		
Married	89	79.5%
Unmarried	23	20.5%
Education		
Graduate	84	75.0%
Post-Graduate	13	11.6%
Professional degree	10	8.9%
Doctorate degree	5	4.5%
Employment status		
Self employed	21	18.8%
Retired	4	3.6%
Employed for wages	51	45.5%
Homemaker	36	32.1%

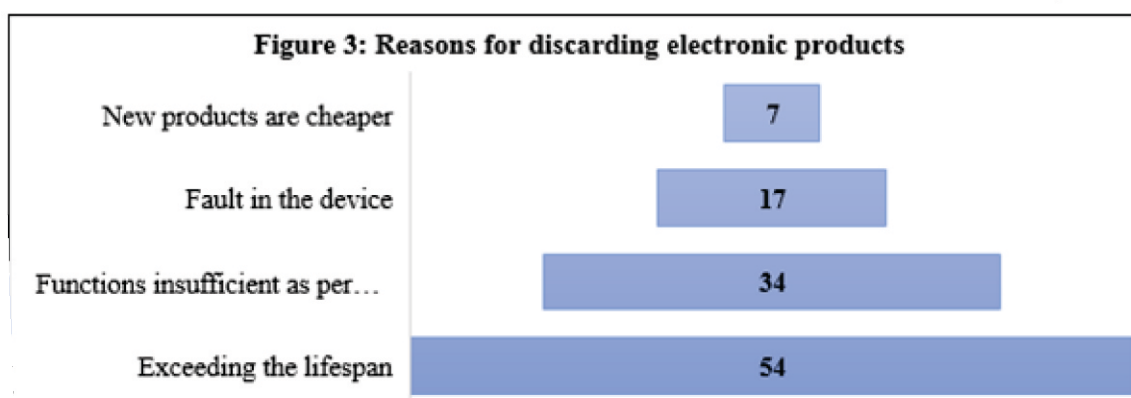
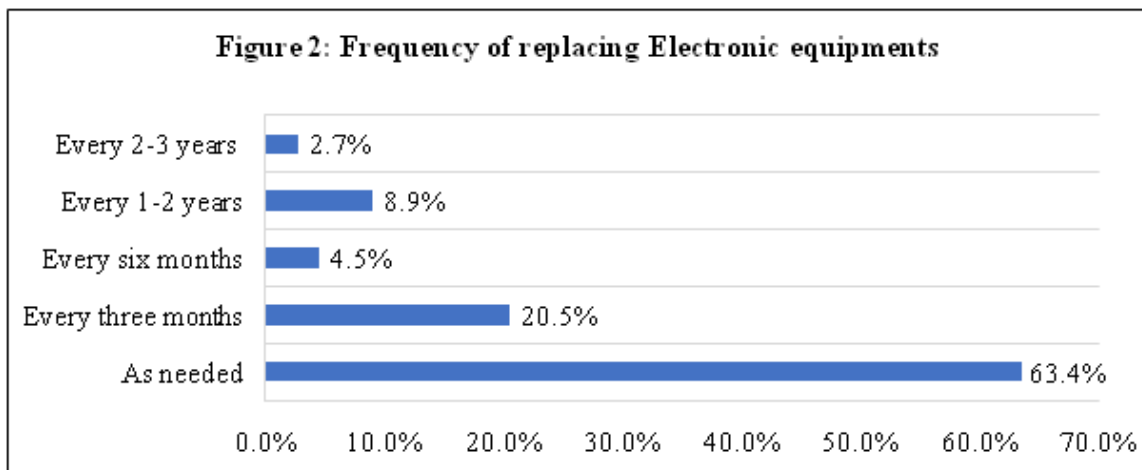


Table 2 represents percentage of responses on basis of attitude towards managing e-waste. 40% of the respondents mentioned that door step pick-up facility will be effective in e-waste collection and 28% of the respondents believe that this way could be very effective. Researchers have also identified that if the collection procedure for e-waste becomes easy, then there will be better management of electronic waste. 52% respondents stated that placement of collection bins in nearby areas will improve in collection of e-waste. A very low percentage of respondents i.e. only 3% believe it to be a very ineffective method. Further majority of respondents stated that e-waste collection drives should be twice a month and it will help in improving e-waste collection.

Table 2: Percentage of responses on basis of attitude towards managing e-waste					
Statement	Very ineffective	Ineffective	Average	Effective	Very effective
How effective would be door step pick up (by calling a toll -free no.) in improving E - waste Collection?	4	11	17	40	28
How effective would be collection bins at nearby areas in improving e -waste collection?	3	12	20	52	13
How effective would be collection drives (twice a month) in improving e -waste collection?	0	8	14	49	29
How effective would be e-platform (e.g.: websites like Olx.in, Snapdeal.com) in improving E-waste collection?	8	10	18	53	11

Further on the basis of the responses gathered following are the major findings:

- 47% respondents said that consumers are responsible for management of e-waste, 28% of respondents said that manufacturers are responsible for management of e-waste and 25% respondents mentioned that Government is responsible for the same.
- It is indicated that self-employed women are more aware towards management of e-waste as compared to homemakers. Consequently, it can be understood that the awareness levels towards management of e-waste is higher amongst self-employed women.
- Majority of the respondents are graduates and out the graduates 67% of the respondents are more aware towards effect of e-waste on human health and environment.
- Married females felt that absence of proper e-waste collection system is one of the main reasons for poor disposal of e-waste

• **Recommendations:**

The present study makes both academic and practical contributions. On the basis of the data analysis, the following recommendations are proposed. It can be interpreted that the

awareness levels of consumers need to be increased so that e-waste can be managed in a better manner. Also, opening of e-waste collection centres can help in improving the e-waste collection facility hence improving the management of e-waste. Results also indicate that it is of paramount importance that the consumers get involved in the recovery process. Moreover, women consumers can play a better role in spreading awareness towards segregation of e-waste from regular household waste. Consequently, more awareness campaigns can be adopted for female consumers. Further one of the reasons for the results of the survey can be understood with the fact that people will get more involved in the recovery process if they are motivated by offering more amount of money. Some companies have also introduced 'take back schemes' under which the consumers are paid some amount for returning the used electronic item.

- **Scope for further research:**

This paper identifies the attitude and awareness level of women towards management of e-waste in Ambala district. Future researchers may expand the survey across different geographical boundaries. It would be important to test these measures in other cities of India to improve the validity of the study. Moreover, few demographic parameters have been considered for the study. It may be expanded to more demographic characteristics of consumers to better understand the perspective, knowledge and attitude of consumers towards management of e-waste.

- **Conclusion**

Management of e-waste has become a challenge for many states of India. Such huge quantum of e-waste cannot be dealt with in a single day rather consistent and conscious efforts are required for dealing with the same. The current study on attitude of women consumers towards management of e-waste clearly indicates that women who are employed are more aware towards the issue of electronic waste and can assist well in managing it. Simplification of e-waste collection facility can be one of the proposed solutions for management of e-waste but for executing it, coordinated efforts are required on the part of consumers, manufacturers and the government. In a nutshell it can be stated that management of e-waste is not an impossible task to complete but some

coordinated efforts are required to be undertaken in this direction.

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