"A STUDY ON E- WASTE MANAGEMENT AWARENESS AMONG B.ED STUDENTS IN THIRUVALLUR DISTRICT"

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ABTSRACT

This study examined the study on E- Waste Management Awareness among B.Ed Students in Thiruvallur District. This study adopted normative survey method of research participant's were 200 B.Ed students are randomly selected from various colleges in Thiruvallur District. The Research Instruments used for data collection was E-Waste Management Awareness Questionnaire developed by Maxwell, B (2012) tested at 0.05 and 0.01 level of significance. The result revealed that B.Ed Students have high level of E-Waste Management Awareness,

Keywords: Electronic Waste, Awareness, Management, Recycling, Electronic Equipment, Environment.

INTRODUCTION

In India, the quantity of "e-waste" or electronic waste has now become a major problem. Disposal of e-waste is an emerging global environmental and public health issue, as this waste has become the most rapidly growing segment of the formal municipal waste stream in the world. Dahl R. (2002) E-waste or Waste Electrical and Electronic Equipment (WEEE) are loosely discarded, surplus, obsolete, broken, electrical or electronic devices. In India most of the waste electronic items are stored at households as people do not know how to discard them). This ever-increasing waste is very complex in nature and is also a rich source of metals such as gold, silver, and copper, which can be recovered and brought back

into the production cycle. So e-waste trade and recycling alliances provide employment to many groups of people in India. Around 25,000 workers including children are involved in crude dismantling units in Delhi alone where 10,000–20,000 tonnes of e-waste are handled every year by bare hands. Improper dismantling and processing of e-waste render it perilous to human health and our ecosystem. Therefore, the need of proper e-waste management has been realized.

NEED AND IMPORTANCE OF THIS STUDY

Advances in the field of science and technology brought about industrial revolution in the 18th Century which marked a new era in human civilization. In the 20th Century, the information and communication revolution has brought enormous changes in the way we organize our lives, our economies, industries and institutions.

These spectacular developments in modern times have undoubtedly enhanced the quality of our lives. At the same time, these have led to manifold problems including the problem of massive amount of hazardous waste and other wastes generated from electric products. These hazardous and other wastes pose a great threat to the human health and environment. The issue of proper management of wastes, therefore, is critical to the protection of livelihood, health and environment. It constitutes a serious challenge to the modern societies and requires coordinated efforts to address it for achieving sustainable development. As the fastest growing component of municipal waste across the world, it is estimated that more than 50 MT of e-waste is generated globally every year. In other words, these would fill enough containers on a train to go round the world once.18 However, since the markets in the West have matured; it is expected to account for only 2 per cent of the total solid waste generated in developed countries by 2015. Therefore, with increasing consumerism and an anticipated rise in the sales of electronic products in the countries experiencing rapid economic and industrial growth, the higher percentage of e-waste in

municipal solid waste is going to be an issue of serious concern. This is the crucial period where right judgement is needed. So the investigator felt the need for conducting a study to estimate the level of E-Waste Management Awareness among B.Ed Students.

STATEMENT OF THE PROBLEM

Formally the problem can be stated as follows:

"A study on E- Waste Management Awareness among B.Ed Students in Thiruvallur District**".**

E- Waste Management

E-waste is a term used to cover almost all types of electrical and electronic equipment that has or could enter the waste stream. Although e-waste is a general term, it can be considered to cover TVs, computers, mobile phones, white goods (e.g. fridges, washing machines, dryers etc.), home entertainment and stereo systems, toys, toasters, kettles – almost any household or business item with circuitry or electrical components with power or battery supply.

Awareness

The term 'Awareness' has been taken with the meaning of "Having knowledge or discernment of something"- here about E-Waste Management.

OBJECTIVES OF THE STUDY

The present study has the following objectives:-

1. To find out the B.Ed Students' level of E-Waste Management Awareness.
2. To find out whether there is any significant difference between Male and Female in their E-Waste Management Awareness.
3. To find out whether there is any significant difference between Arts and Science B.Ed Students in their E-Waste Management Awareness.

4. To find out whether there is any significant difference between rural and urban located B.Ed Students in their E-Waste Management Awareness.
5. To find out whether there is any significant difference in the E-Waste Management Awareness of B.Ed Students with respect to their Age (below 25 years/25-30 years/Above 30 years).
6. To find out whether there is any significant difference between Joint family and Nuclear family B.Ed Students with respect to their E-Waste Management Awareness.

HYPOTHESES OF THE STUDY

Investigator of this study formulated the following null hypotheses on the basis of the objectives:

1. The level of E-Waste Management Awareness of the B.Ed Students'
2. There is no significant difference between Male and Female B.Ed Students in their E-Waste Management Awareness.
3. There is no significant difference between Arts and Science B.Ed Students in their E-Waste Management Awareness.
4. There is no significant difference between rural and urban located B.Ed Students in their E-Waste Management Awareness.
5. There is no significant difference in the E-Waste Management Awareness of B.Ed Students with respect to their Age (below 25 years/25-30 years/Above 30 years).
6. There is no significant difference between Joint family and Nuclear family B.Ed Students with respect to their E-Waste Management Awareness.

RESEARCH DESIGN

METHODOLOGY

The study was through normative survey method of research and it is most suitable for the present study.

SAMPLE

A stratified random sampling technique was adopted for the selections of Sample 200 B.Ed students were taken for the present study.

Table-1

Table showing the distribution of Sample and its Sub-samples selected for the present study

Demographic Variable	**Sub sample**	**N**
Gender	Male	99
	Female	101
Group	Arts	101
	Science	99
Locality	Rural	106
	Urban	94
Age	Below 25 years	57
	25-30 years	79
	Above 30 years	64
Type of Family	Joint	151
	Nuclear	49
Entire		200

RESEARCH TOOLS USED IN THE PRESENT STUDY

To verify the framed hypotheses the following tools and techniques were used in the present investigation.

- E-Waste Management Awareness Questionnaire" developed by **Maxwell, B (2012).**

STATISTICAL TECHNIQUES

Suitable descriptive and inferential statistical techniques were used in the interpretation of the data to draw out a more meaningful picture of results from the collected data. In the present study the following statistical measures were used

A) Descriptive Analysis:

i) Measures of Central Tendency (Mean).

ii) Measures of Variability (Standard Deviation).

B) Differential Analysis:

iii) Independent Sample "t" Test.

MAJOR FINDINGS

Following are the important findings arrived by the investigator based on the data collected and analyzed.

- It is found that the B.Ed Students have high level of E-Waste Management Awareness.
- It is found that there is significant difference between Male and Female B.Ed Students with respect to their E-Waste Management Awareness.
- It is found that there is significant difference between Arts and Science B.Ed Students with respect to their E-Waste Management Awareness.
- It is found that there is no significant difference between rural and urban B.Ed Students with respect to their E-Waste Management Awareness.
- It is found that there is significant difference in the E-Waste Management Awareness of B.Ed Students with respect to Below 25 years & 25-30 years age and for 25-30 years & Above 30 years of age and there is no significant difference between B.Ed Students of Below 25 years & Above 30 years ages..

- It is found that there is no significant difference between Joint family and Nuclear family B.Ed Students with respect to their E-Waste Management Awareness.

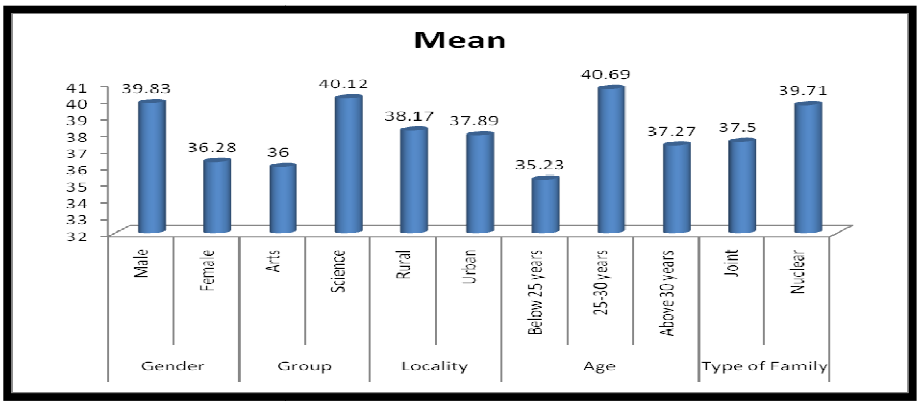
Table-2

The Mean and Standard Deviation of E-Waste Management Awareness scores of B.Ed Students

Demographic Variable	Sub sample	N	Mean	SD
Gender	Male	99	39.83	11.92
	Female	101	36.28	9.00
Group	Arts	101	36.00	9.68
	Science	99	40.12	11.27
Locality	Rural	106	38.17	10.56
	Urban	94	37.89	10.86
Age	Below 25 years	57	35.23	8.94
	25-30 years	79	40.69	12.17
	Above 30 years	64	37.27	9.43
Type of Family	Joint	151	37.5	10.41
	Nuclear	49	39.71	11.39
Entire		200	38.04	10.67

Figure -1

Mean scores of B.Ed Students' E-Waste Management Awareness Scores



RECOMMENDATIONS

The present study gives a clear-cut view about the present position of B.Ed Students' E-Waste Management Awareness. Based on the important findings stated earlier the following recommendations are suggested:

- This study shows high level of E-Waste Management Awareness. This should be sustained.
- Frequent training and awareness programmes should be conducted to increase B.Ed Students' E-Waste Management Awareness
- Training on methods of enhancing E-Waste Management Awareness of B.Ed Students should be included in the B.Ed curriculum.

CONCLUSION

The present study gives a clear-cut view about the present position of B.Ed Students' E-Waste Management Awareness. Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for refurbishment, reuse, resale, salvage recycling through material recovery, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution . E-waste or electronic waste is created when an electronic product is discarded after the end of its useful life. The rapid expansion of technology and the consumption driven society results in the creation of a very large amount of e-waste in every minute. Debate continues over the distinction between "commodity" and "waste" electronics definitions. Some exporters are accused of deliberately leaving difficult-to-recycle, obsolete, or non-repairable equipment mixed in loads of working equipment (though this may also come through ignorance, or to avoid more costly treatment processes). Protectionists may broaden the definition of "waste" electronics in order to protect domestic markets from working secondary equipment. The high value of

the computer recycling subset of electronic waste (working and reusable laptops, desktops, and components like RAM) can help pay the cost of transportation for a larger number of worthless pieces than what can be achieved with display devices, which have less (or negative) scrap value. The emission of fumes, gases, and particulate matter into the air, the discharge of liquid waste into water and drainage systems, and the disposal of hazardous wastes contribute to environmental degradation. The processes of dismantling and disposing of electronic waste in developing countries led to a number of environmental impacts as illustrated in the graphic. Liquid and atmospheric releases end up in bodies of water, groundwater, soil, and air and therefore in land and sea animals – both domesticated and wild, in crops eaten by both animals and human, and in drinking water. Recycling is an essential element of e-waste management. Properly carried out, it should greatly reduce the leakage of toxic materials into the environment and militate against the exhaustion of natural resources. However, it does need to be encouraged by local authorities and through community education. Less than 20% of e-waste is formally recycled, with 80% either ending up in landfill or being informally recycled – much of it by hand in developing countries, exposing workers to hazardous and carcinogenic substances such as mercury, lead and cadmium. Certified companies ensure they are meeting strict environmental standards which maximize reuse and recycling, minimize exposure to human health or the environment, ensure safe management of materials and require destruction of all data used on electronics. Certified electronics recyclers have demonstrated through audits and other means that they continually meet specific high environmental standards and safely manage used electronics. Once certified, the recycler is held to the particular standard by continual oversight by the independent accredited certifying body. A certification board accredits and oversees certifying bodies to ensure that they meet specific responsibilities and are competent to audit and provide certification E-Waste Management centers are to be set up in District

level and their function should be ensured with good quality of service to the Public. Inculcation of E-Waste Management Awareness should be included in all the levels of Education.

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