Electronic Waste Knowledge among Electronic Repairers in Bauchi South Senatorial District, Bauchi State, Nigeria

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Abstract

The study investigated electronic waste knowledge among electronic repairers in Bauchi South Senatorial District. Two specific objectives and one null hypothesis guided the study. The cross sectional survey research design was adopted for the study. The population for the study consisted of 415 registered electronic repairers in Bauchi South Senatorial District. The entire population was relatively small and manageable and was used for the study. A structured Electronic Waste Knowledge Scale (EWKS) was used for data collection. Research questions were analysed and answered using frequency and percentage, while chi-square statistics was used to test the null hypothesis at .05 alpha level. Results revealed that, electronic repairers in Bauchi South Senatorial District had high (58.4%) knowledge of e-waste. Age (p= .000<.05), income level (p= .000<.05), and level of education (p= .042<.05) were significantly associated with the knowledge of electronic waste. However, there should be frequent organization of workshops, seminars and health talks by health educators, government and non-governmental organizations on the issue of e-waste for electronic repairers as well as the general public in order to maintain a high level of knowledge of e-waste.

Keywords: Electronic waste, Knowledge, Electronic repairers, Bauchi South

Introduction

For many years, the term electronic waste (e-waste) has been used to refer to a specific kind of waste that comes from all discarded electronic appliances. When electrical appliances and other electronic devices are used in daily life around the world, the demand for these items rises, which in turn causes the rate at which electronic waste is generated to increase (Baldé et al., 2017). Electronic waste is also believed to be the waste stream that is expanding the fastest both in Europe and elsewhere in the world (House of Commons Environmental Audit Committee, 2021). Thus, indicating that there is a constant increase in the amount of e-waste generated worldwide.

The rate at which electronic waste is produced worldwide is concerning. According to the 2020 global e-waste monitor study, the overall weight of worldwide consumption of Waste Electrical and Electronic Equipment (WEEE) rises by 2.5 million metric tonnes per year on average (Forti et al., 2020). Additionally, Rahul et al. (2021) claimed that variables including cumulative market diffusion, replacement market, and high obsolescence rate are to blame for the ongoing increase in the annual generation rate of e-waste.

One can analyse the preceding paragraph's implications by thinking about how many firms are always producing new smartphones. The models of smartphones are always changing, and this also applies to their accessories, which frequently change with each new generation. Therefore, without considering the effects on the environment, planned obsolescence is employed as a driving force behind the demand for ongoing product development that encourages shorter durability and disposal cycles (Perkins et al., 2014). There are various viewpoints on electronic waste, thus it has been defined differently by a number of authors.

The word "electronic waste" encompasses a broad range, hence leading to different definitions. According to Parajuly et al. (2019), e-waste, sometimes referred to as WEEE, is made up of electrical and electronic gadgets and all of its constituent components that have been determined to be nearing the end of their useful lives. Also, it could comprise items that are completely working but no longer meet the needs of the first buyer (Bimir, 2020). In this study, e-waste refers to any electronic product (including all of its parts and accessories) which is no longer useful to an electronic repairer, thus, is discarded because it is viewed as obsolete. To make it easier to identify, e-waste has been divided into several categories due to the large range of electronic appliances.

There are different classifications of e-waste. However, this study adopted that of the European Union Directive. Miner et al. (2020) reported that the European Union Directive reviewed the classification of e-waste from more than ten to only six classes for international use. They include; temperature exchange equipment (refrigerators, freezers, air conditioners and so on), screen and monitors (computers, laptops, notepads, televisions and so on), large equipment (photocopiers, washing machines, dish washers, and much more), lamps (electric bulbs, fluorescent lamps, light emitting diodes and so on), small equipment (microwave ovens, radios, video cameras, electric cookers and so on) and small ICT (devices, such as telephones, smartphones, headsets, smart watches, earbuds, air-pods and so on). As seen above, the forms of e-waste are numerous; as such there are numerous harmful health and environmental effects associated with it.

Both hazardous and non-hazardous materials can be found in e-waste components. Non-ferrous metals like copper and aluminum as well as valuable metals like gold, silver, platinum, palladium, and so on are examples of non-hazardous materials. Nonetheless, the majority of e-waste components contain dangerous substances like lead, mercury, arsenic, beryllium, cadmium, and flame retardants that are present in excess of threshold levels. Human health is harmed by these substances. Health conditions such as impaired cognitive function, behavioural abnormalities, attention impairments, hyperactivity, conduct issues, and a lower intelligence quotient are some detrimental health impacts associated with e-waste (Kaushik, 2018). It has been discovered that the groups most susceptible to the harmful health effects of e-waste are children and pregnant women. Due to their special vulnerabilities, such as their bodies' rapid development of the respiratory, immunological, and central neurological systems, children are more vulnerable than adults to toxins discharged from e-waste (World Health Organisation, 2023). In order to maintain optimal health of women and children, as well as the general public, it is imperative that one has good knowledge of e-waste, it components, as well as its impact on human health and the environment.

There is no universal definition of knowledge, hence it has been conceptualized by many authors. Knowledge, according to Haradhan (2016), is a set of experiences, pertinent data, and expert insight that provides a framework for evaluating and integrating fresh experiences and data. Okeke et al. (2021) defined knowledge as information, facts, skills and understanding gained through learning or experience. In this study, knowledge refers to an electronic repairer’s familiarity or comprehension of e-waste, its components, and its impacts on human health and the environment.

There are certain socio-demographic factors that can impact on one's knowledge of e-waste. Studies (Ritu & Shalini, 2013; Bhat & Patil, 2014; Sivathanu, 2016; Miner et al., 2020) have shown that socio-demographic factors such as age, income level, level of education, gender and so on, are associated with knowledge of e-waste. Association between knowledge and factors such as electronic repairers' age, income level and level of education were considered in this study.

An individual's chronological age can have an influence on his level of knowledge of e-waste. For the purpose of this study, respondent's ages were categorized as follows: 15–25 years, 26–35 years, and 36 years and older. According to Ritu and Shalini (2013), people in their 20s and 25s have a higher level of e-waste understanding than people in their elder years. Miner et al. (2020), on the other hand, had a different viewpoint. According to the authors, there is no discernible age-based difference in respondents' awareness of or desire to engage in e-waste management.

Income level is another important factor that has been found to have an impact on e-waste knowledge. In this context, income level refers to the total amount of money that an electronic repairer earns in a 30-day period (one month). The income brackets for electronic repairers are as follows: less than ₦50,000, ₦50,000 – ₦99,000, and ₦100,000 and above. According to a study conducted in Pune, India, people's awareness of e-waste was positively correlated with their income (Bhat & Patil, 2014).

Ones level of education can have great impact on knowledge of e-waste. The highest degree of education acquired by an electronic repairer is referred to as the level of education in this study. These levels include no formal education, primary education, secondary education, and tertiary education. Research has shown that people with higher levels of education are more likely to be well-versed about e-waste and how it affects human health. A study conducted in Pune city revealed that postgraduate students have a higher knowledge of e-waste than do graduates and undergraduate students (Sivathanu, 2016).

Professionals that specialise in repairing malfunctioning or improperly operating electronic devices and equipment are called electronic repairers or technicians. They are in charge of configuring, upkeep, and repairs for electronic devices and systems. To guarantee that the equipment is operating properly, they carry out testing, diagnose problems, and adhere to technical manuals (Society for Human Resource Management, 2023). These technicians are frequently discovered to have mountains of e-waste that they have produced while working. Therefore, it is imperative that they have a good knowledge of e-waste in order to enable them avoid the harmful health effects associated with it. A good number of these electronic repairers can be found in Bauchi Senatorial District, where the study was conducted.

All things considered, Bauchi South Senatorial District which is one of the three senatorial districts found in the state, is the centre of regional economic, educational, technological, cultural, and social activities, which opens up new opportunities for the production of e-waste. This implies that there is a significant demand for the usage of electronic gadgets, particularly among young people, which raises the possibility of increased e-waste generation. As a result, the researcher realised that it was necessary to look at the knowledge of e-waste among electronic repairers, who are primarily located in Bauchi State South Senatorial District.

Purpose of the Study

The purpose of the study was to investigate electronic waste knowledge among electronic repairers in Bauchi South Senatorial District, Bauchi State. Specifically, the study determined the:

1. level of knowledge of electronic waste among electronic repairers;

2. level of knowledge of electronic waste among electronic repairers based on socio-demographic factors (age, income level, and level of education);

Research Questions

Two research questions were posed to guide the study:

1. What is the level of knowledge of electronic waste among electronic repairers?
2. What is the level of knowledge of electronic waste among electronic repairers based on socio-demographic factors (age, income level, and level of education)?

Hypothesis

One null hypothesis was postulated and tested at .05 level of significance:

1. Socio-demographic factors (age, income level, and level of education) are not significantly associated with the knowledge of electronic waste among electronic repairers in Bauchi South Senatorial District.

Materials and Methods

The study adopted a cross-sectional survey research design. The design was used in this study to determine electronic waste knowledge among electronic repairers in Bauchi South Senatorial District. The population of the study consisted of 415 registered electronic repairers found within the district. Singh and Masaku (2014) stated that if a given population is small, the entire population should be used in order to achieve a desirable level of precision. Therefore, all the registered electronic repairers (415) were used for the study. Hence there was no sampling.

A structured Electronic Waste Knowledge Scale (EWKS) was used for data collection. The instrument was validated by five experts from the Department of Human Kinetics and Health Education, University of Nigeria. The instrument consisted of 14 items grouped into two sections, A and B. Section A consisted of three items on socio-demographic characteristics of the respondents (age, income level, and level of education). Section B consisted of 11 multiple choice items which assessed Electronic Waste Knowledge. The instrument was further subjected to reliability testing using Split-half method (Spearman-Brown Correlation Coefficient). An internal consistency of .88 was obtained and adjudged reliable for use according to the assertions of Haradhan (2017). Copies of the questionnaire were administered to the respondents and collected on the spot. The data collection process was carried out within three weeks. Out of the 415 questionnaires administered, only 399 copies were returned, which gave a return rate of 96.1 per cent. The 399 returned questionnaires were duly filled out and used for analyses. Frequency and percentage were used to analyse and answer the research questions. Knowledge score was determined based on responses from 11 knowledge-based items. Each correct response attracted one point, while a wrong response attracted no point. Therefore, the knowledge scores were interpreted as follows; low (0-3), moderate (4-7), and high (8-11). By this, the level of knowledge was determined by the highest percentage score for either of the three levels (low, moderate, and high). This procedure was followed by Perumal et al. (2013) to interpret level of knowledge in their study. Chi-square statistics was used to test null hypothesis at 0.05 level of significance.

Results

Table 1: Electronic Waste Knowledge Level among Electronic Repairers (n=399)

S/N	Item Statement	f (%)
1	Electronic waste (e-waste) can be defined as non-useful and discarded electronic devices.	276 (69.2)
2	Broken smartphone screen is an example of electronic waste.	326 (81.7)
3	Mercury is a hazardous element which can be found in components of electronic waste.	252 (63.2)
4	Battery is a component of e-waste that can often contain hazardous substances.	292 (73.2)
5	Paper documents are not considered as electronic waste.	315 (78.9)
6	Water pollution is a primary environmental concern associated with improper electronic waste disposal.	101 (25.3)
7	Electronic waste can cause diseases such as Cancer.	294 (73.7)
8	Recycling electronic waste involves extracting useful parts from damaged electronics.	250 (62.7)
9	In Nigeria, National Environmental Standards and Regulation Enforcement Agency (NESREA) is responsible for implementing regulations concerning electronic waste.	339 (85.0)
10	Responsible recycling is the best electronic waste disposal method.	244 (61.2)
11	Copper is commonly recovered during electronic waste recycling.	186 (46.6)
	Overall	
	Low knowledge (0-3)	64 (16.0)
	Moderate knowledge (4-7)	102 (25.6)
	High knowledge (8-11)	233 (58.4)

Table 1 shows that overall, electronic repairers in Bauchi South Senatorial District had high (58.4%) knowledge of electronic waste. Also, the table shows that 85 per cent of the respondents knew that NESREA is responsible for implementing regulations concerning e-waste; 81.7 per cent knew that broken smart phone screen is an example of e-waste; and 73.7 per cent knew that e-waste can cause cancer.

Table 2: Electronic Waste Knowledge Level among Electronic Repairers based on Age (n=399)

S/N	Item Statement	15-25 years (n=204) f (%)	26-35 years (n=106) f (%)	36+ years (n=89) f (%)
1	Electronic waste (e-waste) can be defined as non-useful and discarded electronic devices.	156 (76.5)	78 (73.6)	42 (47.2)
2	Broken smartphone screen is an example of electronic waste.	190 (93.1)	98 (92.5)	38 (42.7)
3	Mercury is a hazardous element which can be found in components of electronic waste.	144 (70.6)	70 (66.0)	38 (42.7)
4	Battery is a component of electronic devices that can often contain hazardous substances.	169 (82.8)	82 (77.4)	41 (46.1)
5	Paper documents are not considered as electronic waste.	189 (92.6)	97(91.5)	29 (32.6)
6	Water pollution is a primary environmental concern associated with improper electronic waste disposal.	61 (29.9)	24 (22.6)	16 (18.0)
7	Electronic waste can cause diseases such as Cancer.	164 (80.4)	84 (79.2)	46 (51.7)
8	Recycling electronic waste involves extracting useful parts from damaged electronics.	151 (74.0)	76 (71.7)	23 (25.8)
9	In Nigeria, National Environmental Standards and Regulation Enforcement Agency (NESREA) is responsible for implementing regulations concerning electronic waste.	191 (93.6)	95 (89.6)	53 (59.6)
10	Responsible recycling is the best electronic waste disposal method.	161 (78.9)	71 (67.0)	12 (13.5)
11	Copper is commonly recovered during electronic waste recycling.	105 (51.5)	53 (50.0)	28 (31.5)
	Overall			
	Low knowledge	9 (4.4)	4 (3.8)	51 (57.3)
	Moderate knowledge	46 (22.5)	33 (31.1)	23 (25.8)
	High knowledge	149 (73.0)	69 (65.1)	15 (16.9)

Table 2 shows that overall, electronic repairers within the age range of 15–25 years had high (73.0%) knowledge of electronic waste more than those within the age range of 26–35 years (65.1%). Furthermore, the table reveals that electronic repairers within the age range of 36 years and above had a low (57.3%) knowledge of electronic waste.

Table 3: Electronic Waste Knowledge Level among Electronic Repairers based on Income Level (n=399)

S/N	Item Statement	Less than ₦50,000 (n=260) f (%)	₦50,000-₦99,000 (n=81) f (%)	₦100,000 and above (n=58) f (%)
1	Electronic waste (e-waste) can be defined as non-useful and discarded electronic devices.	192 (73.8)	51 (63.0)	33 (56.9)
2	Broken smartphone screen is an example of electronic waste.	230 (88.5)	57 (70.4)	39 (67.2)
3	Mercury is a hazardous element which can be found in components of electronic waste.	178 (68.5)	41 (50.6)	33 (56.9)
4	Battery is a component of electronic devices that can often contain hazardous substances.	206 (79.2)	50 (61.7)	36 (62.1)
5	Paper documents are not considered as electronic waste.	231 (88.8)	51(63.0)	33 (56.9)
6	Water pollution is a primary environmental concern associated with improper electronic waste disposal.	70 (26.9)	19 (23.5)	12 (20.7)

7	Electronic waste can cause diseases such as Cancer.	202 (77.7)	52 (64.2)	40 (69.0)
8	Recycling electronic waste involves extracting useful parts from damaged electronics.	181 (69.6)	42 (51.9)	27 (46.6)
9	In Nigeria, National Environmental Standards and Regulation Enforcement Agency (NESREA) is responsible for implementing regulations concerning electronic waste.	232 (89.2)	65 (80.2)	42 (72.4)
10	Responsible recycling is the best electronic waste disposal method.	187 (71.9)	37 (45.7)	20 (34.5)
11	Copper is commonly recovered during electronic waste recycling.	116 (44.6)	39 (48.1)	31 (53.4)
	Overall			
	Low knowledge	23 (8.8)	23 (28.4)	18 (31.0)
	Moderate knowledge	64 (24.6)	20 (24.7)	18 (31.0)
	High knowledge	173 (66.5)	38 (46.9)	22 (37.9)

Table 3 shows that overall, electronic repairers who earn less than ₦50,000 monthly had high (66.5%) knowledge of e-waste more than those who earn between ₦50,000–₦99,000 monthly (46.9%) and those who earn ₦100,000 and above monthly (37.9%).

Table 4: Electronic Waste Knowledge Level among Electronic Repairers based on Level of Education (n=399)

S/N	Item Statement	No Formal Education (n=5) f (%)	Primary Education (n=2) f (%)	Secondary Education (n=108) f (%)	Tertiary Education (n=284) f (%)
1	Electronic waste (e-waste) can be defined as non-useful and discarded electronic devices.	1 (20.0)	1 (50.0)	62 (57.4)	212 (74.6)
2	Broken smartphone screen is an example of electronic waste.	2 (40.0)	2 (100.0)	81 (75.0)	24 (84.9)
3	Mercury is a hazardous element which can be found in components of electronic waste.	2 (40.0)	2 (100.0)	55 (50.9)	193 (68.0)
4	Battery is a component of electronic devices that can often contain hazardous substances.	3 (60.0)	1 (50.0)	76 (70.4)	212 (76.4)
5	Paper documents are not considered as electronic waste.	1 (20.0)	2 (100.0)	81 (75.0)	231 (81.3)
6	Water pollution is a primary environmental concern associated with improper electronic waste disposal.	1 (20.0)	1 (50.0)	41 (38.0)	58 (20.4)
7	Electronic waste can cause diseases such as Cancer.	1 (20.0)	1 (50.0)	83 (76.9)	209 (73.6)
8	Recycling electronic waste involves extracting useful parts from damaged electronics.	2 (40.0)	1 (50.0)	67 (62.0)	180 (63.4)
9	In Nigeria, National Environmental Standards and Regulation Enforcement Agency (NESREA) is responsible for implementing regulations concerning electronic waste.	2 (40.0)	1 (50.0)	91 (84.3)	245 (86.3)
10	Responsible recycling is the best electronic waste disposal method.	0 (0.0)	0 (0.0)	70 (64.8)	174 (61.3)
11	Copper is commonly recovered during electronic waste recycling.	1 (20.0)	1 (50.0)	53 (49.1)	131 (46.1)
	Overall				
	Low knowledge	4 (80)	1 (50.0)	26 (24.1)	33 (11.6)
	Moderate knowledge	0 (0.0)	0 (0.0)	22 (20.4)	80 (28.2)
	High knowledge	1 (20)	1 (50.0)	60 (55.6)	171 (60.2)

Table 4 shows that overall, electronic repairers with tertiary education had high (60.2%) knowledge of e-waste more than those with secondary education (55.6%). Furthermore, the table shows that of those with no formal education had low (80.0%) knowledge more than those with primary education (50.0%).

Table 5: Chi-square Test of Association between Knowledge of Electronic Waste and Socio-demographic factors among Electronic Repairers

Variables	N	Yes O(E)	No O(E)	χ^2 value	Df	p-value
Age						
15–25 years	204	191(155.9)	13(48.1)			
26–35 years	106	90(81.0)	16(25.0)	158.646	2	.000*
36+ years	89	24(68.0)	65(21.0)			
Income level						
<₦50,000	260	229(198.7)	31(61.3)			
₦50,000-₦99,000	81	45(61.9)	36(19.1)	56.194	2	.000*
₦100,000>	58	31(44.3)	27(13.7)			
Level of Education						
No Formal Education	5	2(3.8)	3(1.2)			
Primary Education	2	1(1.5)	1(0.5)	8.225	3	.042*
Secondary Education	108	76(82.6)	32(25.4)			
Tertiary Education	284	226(217.1)	58(66.9)			

*Significant at $p \leq 0.05$

Table 5 indicates that the hypothesis which states that socio-demographic factors of age (χ^2= 158.646, p= .000 < 0.05), income level (χ^2= 56.194, p= .000 < 0.05), and level of education (χ^2= 8.225, p= .042 < 0.05) are not significantly associated with the knowledge of electronic waste among electronic repairers in Bauchi South Senatorial District was rejected, thus, significant. This implies that age, income level, and level of education are important factors that could influence the knowledge of electronic waste among electronic repairers.

Discussion

The finding in Table 1 showed that electronic repairers in Bauchi South Senatorial District had a high level of knowledge of e-waste. More than half of the respondents were able to identify the hazardous elements found in the components of e-waste, as well as the health effects associated with it. The finding was quite surprising but indeed expected because the although the term e-waste appears to be a relatively emerging concept among people in developing countries, it is expected that due to electronic repairer's nature of work, they might have been exposed to different forms of e-waste which could lead to having some form of information about the concept. The finding is consistent with that of Nuwematsiko et al. (2021) who reported that more than half of the respondents had good awareness of the effects of e-waste on human health and the environment. However, Adane and Zalalem (2022) reported a contrary result. They reported that more than half of the respondents did not know that e-waste has serious environmental consequences, and majority also responded that e-waste did not create any public nuisance. This implied that the respondents had a poor awareness level of e-waste and its effects on health and the environment.

Findings from this study further showed that the knowledge of e-waste among electronic repairers in Bauchi South senatorial district differed based on age. Results from Table 2 indicated that electronic repairers aged 15–25 years had more knowledge of electronic waste more than those aged 26–35 years. Furthermore, the Table showed that electronic repairers aged 36 years and above had a low knowledge of electronic waste. This

results indicated that the level of knowledge of e-waste was more in those who are younger compared to those who are older in age. The corresponding hypothesis as reported in Table 5 indicated that age was significantly associated with the knowledge of electronic waste. This implies that age is an important factor that influences the knowledge of e-waste among electronic repairers. This finding was not surprising because individuals who are younger are more inclined to accessing the internet whereby information concerning e-waste can easily be found, as it is a global issue that continues to gain more recognition, especially in developing countries such as Nigeria. This finding was similar to that of Ritu and Shalini (2013) who reported that e-waste knowledge was higher in individuals aged 20-25 years, as compared to others who are older. However, Miner et al., (2020) had a different opinion. The authors reported that there was no significant difference in the awareness levels of e-waste among respondents according to their age.

Findings in Table 3 indicated that knowledge of e-waste among electronic repairers differs based on income level. Results from the Table further revealed that electronic repairers who earned less than ₦50,000 monthly had a high level of knowledge of e-waste more than electronic repairers who earned between ₦50,000–₦99,000 monthly, and those who earned ₦100,000 and above monthly. The corresponding hypothesis in Table 5 indicated that income level was significantly associated with the knowledge of electronic waste among electronic repairers in Bauchi South Senatorial District. The finding was consistent with that of Sivathanu (2016) who reported that there was a significant relationship between consumer's income level and their awareness of e-waste. Furthermore, the findings indicated that although electronic repairers irrespective of their income level had high knowledge of e-waste, those with lower income had higher scores. This finding was not surprising to the researcher because more income can lead to distractions that may deter an individual from learning about or improving his knowledge on novel issues such as e-waste. However, the finding of Bhat and Patil (2014) disagrees with the finding of this study. They reported that the level of e-waste awareness increased concomitantly with level of income of the respondents.

Findings from the study in Table 4 showed that electronic repairers with tertiary education had high level of knowledge of e-waste more than those with secondary education. Also, those with primary education as well as no formal education had a low level of knowledge of e-waste. This could imply that the knowledge of e-waste increases with one's level of education. The corresponding hypothesis in Table 5 showed that the level of education was significantly associated with the knowledge of electronic waste among electronic repairers in Bauchi South Senatorial District. This also implied that level of education is an important factor that influences the knowledge of e-waste among electronic repairers. This finding was expected and not surprising because individuals who attain a higher level of education may have access to more information which can further enlighten them on the concept of e-waste, hence, such individuals could be more knowledgeable than those who have attained a lower level of education. This finding is similar to that of Sivathanu (2016) who reported that the level of awareness about e-waste was higher in postgraduates as compared to undergraduates. Therefore, supporting the assertion that knowledge of e-waste is likely to increase with one's level of education.

The study findings have implications which include that there could an evident gap between knowledge acquisition and behaviour change in the case of the respondents with regards to e-waste disposal. Therefore, it is imperative to transform theoretical knowledge into practical application through comprehensive and accessible health education. Hence, it can be said that health education interventions are needed to bridge the gap between knowledge acquisition and behavior change by emphasizing actionable steps for healthy disposal of e-waste.

Conclusion

Findings from the study revealed that electronic repairers in Bauchi South Senatorial District had high knowledge of e-waste. Age, income level, and level of education are very important factors considered in obtaining knowledge of e-waste among various people.. Therefore, adequate attention must be given to these findings in order to target specific demographics such as older individuals who possess low knowledge of e-waste. There should be frequent organization of workshops, seminars and health talks by health educators, government and non-governmental organizations on the issue of e-waste for electronic repairers as well as the general public in order to maintain a high level of knowledge of e-waste. Sensitization on the ongoing increase in generation of e-waste should be carried out among individuals who are categorized under certain demographics such as those advanced in age. The use of mass media such as radio programs, fliers and posters should be used by health educators as well as the government to increase awareness on the concept of e-waste. There is need for further awareness on issues concerning e-waste, in order that the knowledge level overtime would attain optimal level. One important limitation is that the study was delimited to only registered electronic repairers in Bauchi South Senatorial District, hence, generalizability of the results can be questioned considering the number of those unregistered.

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