

## Awareness and attitude towards proper solid waste disposal among residents of Port Harcourt Metropolis in Rivers State

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### Abstract

The study explores the awareness and attitude of residents of Port Harcourt Metropolis towards proper solid waste disposal. The study considers the role of adult education programme in boosting the awareness of the people about the means of solid waste disposal. A major concern of the work is to arouse positive attitude of relevant agencies and the general public on the sustainability of the healthy physical environment. There is a global outcry on the challenges of environmental degradation all over the world and mostly in less developed nations like Nigeria. Proactive measures are sought to combat this menace. The first step, however, must be the reorientation of the people who indulge in the unwholesome practices of indiscriminate waste disposal. Although there had been strong speculations of the lack of positive attitude towards proper solid waste disposal throughout Nigerian cities, there is need to develop empirical proof to the claims. Findings of this study have justified the existing claims. The study has preferred the institutionalization of environmental adult education option programmes for a positive attitude towards solid waste disposal in Port Harcourt metropolis.

**Keywords:** solid waste, disposal, Port Harcourt

### Introduction

Waste disposal habit among residents in most urban cities in Nigeria is poor. This is due to the attitude of residents towards the preservation of the aesthetic value of the environment, residents poor environmental attitudes are likened to their lack of proper environmental education. Waste as conceptualizing in Institute for Prospective Technological Studies, by Laurent and Fabio (1997) <sup>[7]</sup>, is in two relative perspectives based on its primary or secondary functions. Waste-based on its primary function is conceptualized as something which has lost its primary function to the owner. But this waste can be of good use (raw material) to another user, this leads us to the secondary function and definition of waste based on its economic value. Waste in which every function is meant to perform is either in the form of solid, gaseous, or liquid form. Wastes that are generated most in households is solid waste. Solid waste as defined by Leon and Omotosho in Mbalisi and Offor, (2012) <sup>[9]</sup> is any non-liquid and non-gaseous products of human activities regarded as being useless by the owner. This category of waste includes food waste, garbage, paper, plastics, leather, glass, broken bottles, cans, electronics, and so on. Solid waste according to Desa, AbKadir and Yusoof (2012) <sup>[4]</sup> can define the generation of undesirable substances which is left after they are used once, or as the useless and unwanted products in the solid state derived from the activities of and discarded by society. Based on this definition, Desa, AbKadir and Yusoof (2012) <sup>[4]</sup> classified solid waste into three distinct groups as follows:

1. any materials if they are recycled or accumulated, stored, or treated before recycling
2. being used in a manner constituting disposal, burned for

- energy recovery, reclaimed, and accumulated speculatively
3. a discarded material that is abandoned, recycled, and inherently waste-like

In view of this classification, Desa, AbKadir and Yusoof (2012:101) <sup>[4]</sup> contend that:

waste is useful material at the wrong place, and that there is no material in this world, which is not useful in one-way or the other. Also, no material, which is created out of nothing, that it is man's ignorance that he consider's certain things as waste and another thing as useful.

In Rivers State, residents living in the urban areas such as Port Harcourt City, Obio/Akpor and environs are in the habit of disposing their waste along the major roads due to poor environmental in them. Residents' habits of disposing waste along the walkways litter the environment and deface the aesthetic nature of the environment in Port Harcourt metropolis. People who carry out this action lack requisite environmental education on the need for preserving the aesthetic value of their immediate environment. This call for the need for environmental adult education that will change their attitude towards the environment and inculcate in them proper waste disposal habit. Attitudes can be defined as favourable or unfavourable feelings toward a characteristic of the physical environment or toward a related problem (Ajzen&Fishbein, 1980) <sup>[2]</sup>. Besides, attitudes are commonly believed to be important to marketing because of an assumed causal link between attitudes, intentions and behaviour (Hini, Gendall& Kearns, 1995) <sup>[3]</sup>. Furthermore, Loudon & Della

(1993) <sup>[8]</sup> state that attitudes have been directly related to behavioural change. According to them, "Behavioral change is a function of the change in behavioural intentions. Changes in behavioural intentions are related to changes in attitudes" in the same vein Atkinson, Smith, Bem, & Nolen-Hoeksema. (1996) <sup>[1]</sup>, contend that attitudes are "favourable or unfavourable evaluations of/and reactions to objects, people, situations, or any other aspects of the world, that help people to predict and change their behaviour. While Hoyer &McInnis, (2001) in his own understanding, considered attitude as an overall evaluation that expresses how much someone likes or dislikes an object, issue, person or action". In view of this, Schultz and Zelezny (2003) <sup>[12]</sup> pointed out that the attitude of environmental concern originates from the individual's concept of himself and from the degree of self-perception as a fundamental part of the natural environment. Environmental attitudes on the other hand according to (Fernandez-Manzanal *et al.* 2007) <sup>[5]</sup>, provide a good understanding of the set of beliefs, interests, or rules that influence environmentalism or pro-environmental action". However environmental education can be used to foster positive environmental attitude. Environmental education according to UNESCO in Okorie (2016) <sup>[10]</sup> is a learning process that increases people's knowledge and awareness about the environment and associated challenges develops the necessary skills and expertise to address the challenges, fosters attitudes, motivations and commitments to make informed decisions and take responsible action. This definition is in line with Stapp *et al.* ien Rhode's (2013) view of environmental education as an education process that is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work towards their solution.

Improper wastes disposal habit among residents in many urban cities have in one way or the other contributed to illness and diseases been suffered by the offenders and people around them. Through wastes, many organisms that lead to diseases are been breed unknowingly by the people who dump these wastes, one of such disease as Lassa fever, cholera, diarrhoea, and so on. Improper waste disposal around home environment and streets attracts rodents and other disease-carrying vectors. However, in other to improve waste disposal habit of Port Harcourt residents, they need an educational programme such as environmental awareness programme that:

1. Create the awareness of dangers associated with improper waste disposal habit.
2. Equip them with knowledge and understanding of proper waste disposal habit, and
3. Induce attitudinal change on how to maintain the aesthetic value of the environment.

Gilberto, (2004) observe that environmental awareness relates to the recognition by the public of environmental issues and values, and the implications they have in relation to economic issues and social standards of living. Furthermore, Gilberto, (2004) assert that public environmental awareness and participation is vital to the goal of achieving a sustainable future. Social involvement in this course of action can only happen when the communities are aware of the importance of maintaining healthy and productive ecosystems. Residents of Port Harcourt metropolis indiscriminately dispose their household waste along major roads, streets and high way's pedestrian walkway without minding the effect on the environment, their surroundings and health. It is based on the need identity above, that this research is been carried out to examine what influences Port Harcourt residents poor attitude towards waste disposal, how environmental adult education programmes will induce positive environmental attitude and thereby lead to a change of behaviour on ways and manner the residents dispose of their solid waste. In other to achieve this, the study was carried out to proffer an answer to following research questions:

1. To what level are residents of Port Harcourt metropolis aware of their improper waste disposal habit?
2. What are the factors that influence Port Harcourt residents' improper waste disposal attitude?
3. In what ways can environmental adult programmes promote proper waste disposal attitude among Port Harcourt residence?

### Methodology

The population of this study comprised of 2000 residents of four towns within Port Harcourt metropolis, out of which 800 residents representing 40% of the total population were proportionately selected. The researchers constructed a 15 items questionnaire titled: Questionnaire on Attitude Towards Proper Solid Waste Disposal (QATPSWD) was designed on a four-point Likert scale, and was used elicit information for this study. Data gathered from the field work was analysed with means and percentages.

The base for taking a decision on research questions was a criterion mean of 2.5, that is:

1. any mean score that is equal or greater than 2.5, was considered a positive response
2. any mean score that is less than 2.5, was considered the negative response

### Results and Discussion

**Research Question One:** To what level are Port Harcourt metropolis residents aware of their improper waste disposal habit?

**Table 1:** Analysis of level of awareness of improper waste management

RQI	To what level are Port Harcourt metropolis residents aware of their improper waste disposal habit?.						
S/N	Statement	Vhl	HI	Le	Vle	X	Remark
1	You are aware that dumping of refuse on the walkways along major tarred roads in Portharcourt is improper	1403 (70.2%)	540 (27%)	32 (1.6%)	25 (1.3%)	3.66	High Level
2	You are aware that dumping your waste on walkways deface the beauty of the environment.	694 (34.7%)	701 (35.1)	211 (10.6%)	394 (19.7%)	2.84	High Level
3	You are aware that improper waste disposal causes is eases	1363 (68.2%)	51 (2.6%)	421 (21.1%)	165 (8.3%)	3.30	High Level
4	You aware that you are supposed to value the environment and maintain it aesthetic nature	1040 (52%)	421 (21.1%)	201 (10.1%)	338 (16.9%)	3.08	High Level
5	You are aware that sorting of waste at home before discarding them will reduce quantity of waste generated for disposal	409 (20.5%)	130 (6.5%)	511 (25.6%)	950 (47.6%)	1.99	Low Level
	Grand mean					2.97	

Table 1 shows that for item one, 70.2% of the respondents to a very high level are aware that dumping of refuse on the walkways along major tarred roads in Port Harcourt is improper, 27% are aware of high level, 1.6% are aware of a low level, and 1.3% are aware to a very low level. Respondent responses on item one gave a mean score of 3.66 which is greater than the criterion of the mean of 2.5 and implies a high-level response. For item two, 34.7% of the respondents strongly agree that they are aware that dumping of refuse on walkways defaces the beauty of the environment, 35.1% agree to it. While 10.6% and 19.7% disagree and strongly disagree to this item. Respondents responses on this item gave a mean of 2.84 which is greater than the criterion mean and implies that respondents agree that dumping of waste on walkways deface the beauty of the environment. For item three, 68.2% and 2.1% of the respondents strongly agree and agree that they are aware that they are supposed to value the environment and maintain its aesthetic nature, but 21.1% and 8.3% disagree and strongly disagree to this item. Respondents responses on this item gave a mean of 3.30, this is also greater than the criterion mean and implies a positive response.

For Items four, 1040 respondents representing 52% responded to a very high level, 421 respondents representing 21.1% responded to a high level, 201 respondents representing 10.1% responded to a low level, and 338 respondents representing 16.9% responded to a very low level. With mean scores of 3.66, 2.84, 3.30, and 3.08 respectively all have positive response rate since the means scores are all greater than the

criterion means of 2.5. This implies that respondents to a high level are aware that:

1. dumping of refuse on walkways along major tarred roads in Port Harcourt is improper and it defaces the beauty of the environment
2. Improper waste disposal causes diseases
3. they are supposed to value the environment and maintain it aesthetic nature

The analysis also shows that 409 respondents representing 20.5% of the respondents responded to a very high level that they are aware that sorting of waste at home before discarding them will reduce quantity of waste generated for disposal, 130 representing 6.5 responded to high level, 511 representing 25.5% responded to a low level, while 950 representing 47.6% which are majority responded to a very low level. With a mean score of 1.99, that is lesser than the criterion mean of 2.5, it implies a negative response that respondents are to a low level aware that sorting of waste at home before discarding them will reduce the quantity of waste generated for disposal. Yire, (2012) established that waste minimization is an excellent opportunity for all countries, both developing and developed, to stop waste at its source, that Educating the public about the benefits of waste minimization is key to reducing waste on the long-term scale

**Research Question Two**

What are the factors that influence Port Harcourt residents' improper waste disposal attitude?

**Table 2:** Analysis of factors influences that Portharcourt residents' improper waste disposal attitude?

RQI	What are the factors that influence Portharcourt residents' improper waste disposal attitude?						
S/N	Statement	SA	A	D	SD	X	Remark
1	Lack of proper waste disposal education	1052 (52.6%)	540 (27%)	211 (10.6%)	197 (9.9%)	3.22	Agree
2	Lack of provision of receptacles for dumping of waste	1440 (72.0%)	377 (18.9%)	137 (6.9%)	40 (2.3%)	3.6	Agree
3	Inadequate information on waste packaging before disposal	1162 (58.1%)	657 (32.9%)	16 (0.8%)	165 (8.3%)	3.4	Agree
4	Inadequate information on the effects of improper waste disposal habit on residents' health and the environment	998 (49.9%)	502 (25.1%)	253 (12.7%)	247 (12.4%)	3.12	Agree
5	Lack of residents awareness of existing laws and regulations on waste disposal	409 (20.5%)	130 (6.5%)	511 (26.6%)	950 (47.5%)	1.99	Disagree
	Grand mean					3.06	

Table 2 analysis, shows that items 1-4 with mean scores of 3.22, 3.6, 3.4 and 3.12, are all greater than the criterion mean of 2.5 and implies that respondents agree that lack of proper waste disposal education and provision of receptacles for

dumping of waste at strategic points; inadequate information on waste packaging and effects of improper waste disposal are factors that influence residents improper waste disposal habit. While for item 5 with a mean score of 1.99 that is lesser than

the criterion mean, implies that respondents disagree that lack of awareness of existing laws and regulations on waste disposal does not influence their waste disposal habits. This finding corresponds to Ulas (2016) observation that low-level environmental awareness and education, low collection frequency, an untimely collection of refuse and so on constitute the challenges that contribute to a litter of waste around the streets. But the finding negates Ulas (2016) view

that low level of public awareness of existing laws and regulations as part of what influences public improper waste disposal habit.

### Research Question Three

In what ways can environmental adult programmes promote proper waste disposal attitude among Port Harcourt residence?

**Table 3:** Analysis of ways environmental adult programmes can promote proper waste disposal attitude among Port Harcourt residence

RQ3	What ways will environmental awareness programme promote proper waste disposal attitude among port Harcourt residence?	SA	A	D	SD	X	Remark
1	Provision of waste management education will create awareness on the need for proper waste disposal habit in you	998 (49.9%)	620 (31%)	137 (6.9%)	245 (12.3%)	3.18	Agree
2	Provision of regular sanitation education will educate you on how to properly bag their waste before disposing it in order to keep their surroundings tidy.	1211 (60.6%)	602 (30.1%)	96 (4.8%)	91 (4.6%)	3.46	Agree
3	Provision of community health education will equip you with knowledge of health risks associated with improper waste disposal	1162 (58.1%)	657 (32.9%)	16 (0.8%)	165 (8.3%)	3.40	Agree
4	Provision of hygiene education will create in you the consciousness of maintaining environmental beauty	946 (47.3%)	858 (42.9%)	121 (6.1%)	75 (3.8%)	3.33	Agree
5	Provision of sanitation education will create in you right attitude on preservation of aesthetic nature of the environment	1529 (76.5%)	87 (4.4%)	226 (11.3%)	158 (7.9%)	3.49	Agree
						3.37	

Table 3, shows that respondents responses on items 1-5, which are 3.18, 3.46, 3.40, 3.33, and 3.49 respectively, are positive responses since they are greater than the criterion means of 2.5. The result implies that respondent agrees that provision of environmental adult education programmes such as:

1. waste management education will help to create awareness of proper waste disposal habit among residents
2. community health education will equip residents with knowledge of health risks associated with improper waste disposal
3. sanitation education will educate residents on how to properly bag their waste before disposing of, that this will help in keeping their surrounding tidy, and also create in them right attitude on the preservation of aesthetic nature of the environment
4. hygiene education programmes will create in residents the consciousness of maintaining environmental beauty.

In line with these findings, Okorie (2016) <sup>[10]</sup> contended that the provision of environmental sanitation, pollution, hygiene, and community health education programmes will demonstrate good sanitary behaviour and practice of responsible waste disposal mechanism. Furthermore, Okorie (2016) <sup>[10]</sup> observed that waste generation in our environment is of increase on daily basis due to population explosion and rapid urbanization. Consequently, the way and manner people handle waste have in one way or the other contributed to environmental problems. Maintenance of environmental quality cannot be attained with the manner in which solid waste is been disposed of. Improper waste disposal leads to air, land and water pollution, which contributes to different health challenges human living in the environment suffers. Therefore, for a healthy environment and healthy living to be attained, residents need to be educated on how to properly handle waste at the source before disposal.

### Conclusion

Waste disposal among urban residents in some cities across Nigeria is disheartening; this is attributed to their poor attitude towards the maintenance of environmental quality. Poor attitude towards environmental quality can be attributed to residents' lack of awareness of the need to always maintain the quality of the environment through their actions on the environment. In order to promote a positive environmental attitude among residents in most urban areas, they need environmental adult education programmes such as waste management education, community health education, sanitation and hygiene education programmes.

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