

ROLE OF ACADEMICS IN IMPROVING WASTE MANAGEMENT AWARENESS AMONG ACADEMIC STAFF IN CROSS RIVER AND AKWA IBOM STATE, NIGERIA

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Abstract

The study assessed the roles of academics in improving waste management awareness in cross river and akwa ibom states, Nigeria. The objective of the study was converted to research question and corresponding hypothesis. Research design adopted for the study was survey design. The sampling techniques were simple random sampling and accidental sampling techniques. Questionnaire was used to collect primary data for the study. The population of the study comprised 3,976 academic staff of the four universities studied. The sample size for the study was 363. Descriptive statistics (mean score and standard deviation) and inferential statistic (contingency chi-square) was adopted for data analysis. In analysing the research hypothesis, the result shows that academics play significant role in improving waste management awareness in educational institutions in Cross River and Akwa Ibom States. Based on these results, recommendation was made that Educational institutions should employ more skilled manpower to ensure effective waste management and educational institution's waste management policies and strategies should be reviewed to meet the contemporary waste management needs.

Key words: Roles of academic, awareness, waste management and educational institutions.

Introduction

Background to the study

Institutional wastes are wastes generated within institutions such as schools, hospitals, markets, prisons and churches. They are often given due environmental concern because they are known to contain noxious materials capable of causing harm to the environment at large and specifically causing illness to vulnerable individuals or group of individuals who live within the institutional community and are constantly exposed to them.

However, nowadays inverse relationships are reported between academic institutions (that are supposed to create awareness on waste management issues) and indiscriminate waste disposal/ineffective waste management. Institutions are now reported for uncontrolled disposal of waste on the streets, waterways, back of offices and classrooms causing aesthetic damage and environmental degradation. More serious but often unrecognized or overlooked, is the transfer of noxious substances to surface water and groundwater.

Research have reported the high association between "inappropriate handling and disposal of institutional waste" and ill health of vulnerable groups such as sanitary workers,

children and scavengers who are constantly exposed as well as those living near open dump sites. These open dumps constitute nuisance to the environment and health hazard to humans. During rains, some materials from the dump sites are drifted through waterways penetrating aquifers and consequently polluting water supplies. Also, disease pathogens such as rodents, insects, and microorganisms reside in dumpsites making them a potential source of sickness to people who may become exposed to infectious wastes (Abah & Ohimain, 2010). As given by the World Health Organization (WHO 2004), it is estimated that “each year, about 8 to 16 million new cases of Hepatitis B virus (HBV) and 2.3 to 4.7 million cases of Hepatitis C virus (HCV) mostly due to very poor waste management systems” (Townend & Cheeseman, 2005).

However, most developing countries like Nigeria lack the infrastructures, resources (human/financial) and the capacity at institutional level suited for effective management of the wastes which they generate. Consequently, poor waste management in many institutions such as schools, markets, hospitals and health centres throughout Nigeria raises serious health concern on people living within and at the proximity of these institutions. Although there are no clear records on the amount of wastes generated in institutions of the developing countries with Nigeria inclusive, there exist documented evidence that daily disposal of tonnes of institutional waste in open dumps and surrounding environments is at increase and at alarming rate (Abah & Ohimain, 2010). The non-existence of sound management of institutional wastes in Nigeria has been reported by others. (Alagoz & Kocasay, 2007 and Abah & Ohimain, 2011).

In some cities in Nigeria, it is reported that educational institutions do not pre-treat their waste before disposing to municipal dumpsites. This act of negligence even at point of generation has led to the creation of unclean and hazardous environment within the academic environment, affecting students, staff and other members of the community. Waste management and treatment options were supposed to protect the academic staff, non-academic staff, students and other people living within and around the academic institutions while minimizing impacts on the environment and preventing the incessant contamination of air, soil and water resources. Although different units involved in institutional waste management system include key actions including “storage”, “collection”, “transportation”, “disposal” etc. as noted previously, to attain the expected effective management results, these activities should be properly checked alongside adoption of precautionary measures to cope with the adverse impact on humans, land, water, air and the general quality of life. It is therefore important to assess the role of academic in improving waste management awareness in the educational institutions to proffer recommendations on best practices among waste generators and need for increased management awareness level among stakeholders.

Statement of problem

Nigeria like many developing countries of the world is faced with issues of improper management of noxious wastes. This is due to a number of reasons including lack of awareness on how to handle these wastes, poor funding, lack of skilled man power and lack of enforcement of legislation for handling, treatment and disposal of waste. Although

educational institutions were supposed to show good examples in waste management since they are regarded as the citadel of awareness creation, cases abound that some educational institutions cannot create awareness on proper waste management nor manage the waste they generate.

Furthermore, health risks involved while handling hazardous wastes or noxious substances are often shunned by stakeholders including government, policy makers, academics and service provider workers, waste pickers at general landfill sites and the general public. Scientific and technical reports on waste management as well as the institutional, economic, environmental and ethical information are lacking. Consequently, the academics are not well fed with adequate information, which leads to poor understanding of waste management issues. It is against this background that this study seeks to assess the role of academics on waste management awareness in Cross River and Akwa Ibom States.

Purpose of the study

The study sought to find out the roles academics play in waste management awareness in Cross River and Akwa Ibom State, Nigeria.

Research question

Following the objective of this study, a research question was posed which is:

What are the roles of academics in improving waste management awareness in the educational institutions?

Statement of hypothesis

To answer the research questions, the following null hypothesis was formulated:

Academics do not play any significant role in improving waste management awareness in the educational institutions.

Literature review

Roles of academics in improving waste management awareness

The role of academics in improving waste management behaviour has strong bearing with good governance. According to Imam (2008), “good governance refers to the process of administration, and more broadly, to the ways in which society manages its collective interest such as waste” (Imam, 2008). The basic responsibility of waste management in school remains with the school administration that must provide functional waste management unit (van de Klundert, 2000). According to van de Klundert (2000), “the administrative aspect encompasses policy, which provide guidelines for management, and management that decides the running of every aspect of the system within the policy framework. It also includes research and training that provide knowledge on further management options to take, and responsibility issues, which determines the role of all stakeholders. Also, of great importance are the technologies used to provide the waste management service” (van de Klundert, 2000).

Among other elements, policy is very important in sustainable management of waste. Astringent legislation can help lay good foundation where waste management can thrive (van de Klundert, 2000). Apart from being stringent, detailed regulations and enforcement strategies should be able to decide those materials such as biodegradable ones that can be discarded by waste generators, type and design of waste storage as well as the kind of equipment that should be used by local authorities or contracted companies to collect and dispose (Van de Klundert, 2000).

In institutions such as schools, regulatory issues exist on different levels and each level as individual or group of individuals is saddled with specific responsibilities (Hayward & Gaskin, 2005). At each level, individual involvement is imperative as they contribute through activities such as waste reduction/separation and composting. On the classroom level, academics can instill these concepts in their students for a better understanding of the benefits associated with good waste handling practice (Hayward & Gaskin, 2005).

At the community level, Hayward and Gaskin (2005) observed that “collection, recycling and composting can involve the informal private, formal private and public sectors to operate the various elements of the system. The school administration can work to institute programmes that will encourage these activities and educate the school community of their benefits”. However, to protect public interest, the State or Local Government makes regulations that help control the entire waste management system (Hayward & Gaskin, 2005; Joseph, 2006). Academics are responsible for educating the people, so even most people who develop and manage institutions in the society were once tutored by the academics (Armijo de vega, Benitez & Ramirez-Barreto, 2008). Universities bear a vicarious responsibility in ensuring that plans and policies that can lead to a sustainable society are drafted, disseminated and imbibed by individuals in the society. Through their expertise, they can increase fundamental awareness/knowledge, skills/technology needed to raise and sustain best practices within individuals in the community. Countries of the western world have made great progress in terms of waste management both at the university and community levels. Developing nations with their peculiar challenges are still trailing behind in this regard.

Nigeria is a typical developing country facing similar challenges of waste management just like other developing nations. Various researchers have identified major challenges facing solid waste management in developing countries. In developing countries, waste disposal has been noted among the elements of waste management as key problem that needs urgent attention (Kasseva & Mbuligwe, 1999). Guerrero, Maas and Hogland (2012) also identified some other challenges associated with waste management, they are: “increasing generation of waste, burden posed on municipal budget as a result of high costs of waste management, lack of understanding over a diversity of factors that affect the different stages of waste management and linkages necessary to enable the entire handling system functioning”. Inadequate manpower and resources to handle waste in a fast-growing society have contributed to the problem of solid waste management in most developing nations. Studies carried out in Malaysia (Manaf, Samah & Zukky, 2009),

(Saeed, Hassan & Mujeeb, 2009), Palestine (Al-khatib Monou, Abu Zahra, Shaheen & Kassinos, 2010) and other similar countries have shown this.

In Nigeria, for instance, Agunwamba (1998) noted that “the poor state of waste management is attributable to an inadequately formulated and poorly implemented environmental policy, neglect of the economic, social, psychological, political and cultural life of Nigerians in the formulation and implementation of waste management programs”. Ogwueleka (2008) also identified “inefficient collection methods, insufficient coverage of collection system and improper disposal as factors contributing to poor waste management in Nigeria.” Institutions of higher learning (universities), being autonomous by nature (Armijo de vega *et al*, 2008) should be given utmost attention as regards waste management. Since they have the capacity to accommodate innovative waste management practices which would trickle to other communities after being properly institutionalized, these institutions are usually held in high esteem and are often seen by the communities as model in terms of adopting best practices.

According to Uhuo and Zavodska (2010), “the schools, local and state government responsible for raising awareness on solid waste management issues often adopt seminars, conferences, workshops, training sessions as the most common techniques in creating awareness observed in the course of the survey in addition to environmental management topics included within junior secondary schools syllabus. Management awareness and attitude can affect all stages in the waste management process. This has an impact on institutional waste storage, waste segregation, recycling, collection frequency, littering and fly-tipping, willingness to pay for waste management services, and the level and type of opposition to waste treatment and disposal facilities”. Agunwamba, (2003) also noted that “people in Nigeria generally have a poor attitude to waste that is unsupportive of effective waste management. Most people perceive environmental quality as the sole responsibility of the government and the individual has only an unimportant role of disposing waste from their immediate surroundings”.

Research design

The survey research design was adopted for this study because sample that can represent the whole population of the study was chosen and inferences drawn from the results of analysis of available data. It involved the collection of data using observational method such as questionnaire to accurately and objectively describe demographic variables as related to awareness of waste management, difference in the categories of waste generated in the educational institutions, difference among educational institutions and awareness of waste management as well as role of academics in improving waste management awareness among academic staff in Cross River and Akwa Ibom State, Nigeria. In survey design, Isangedighi (2012) in his contribution to the text “essential of research and statistics” recommended observational method such as the use of questionnaires and personal interview as means of data collection for data analysis and interpretation of results. The population used in the study was also qualified for generalization to represent the entire university communities in South-South, Nigeria.

Area of the study

The study area of the research include “University of Calabar, University of Uyo, Cross River University of Technology and Akwa Ibom State University”. The University of Calabar is located in the city of Calabar the capital of Cross River State. Geographically, University of Calabar is situated between latitudes 4°30' and 4°40'N and longitudes 08°5' and 8°15'E with an elevation of about 15m above sea level. The area is characterised by double maxima rainfall that climaxes in the months of July and September. University of Calabar records an average annual rainfall amount of 3000mm and relative humidity of above 85% (NAA weather report, 2006). According to Unical website, “University of Calabar has 13 faculties, School of Postgraduate studies, School of Continuing Education (sandwich), Remedial Studies as well as various Research centres (institutes)”. The area is accessible through tarred road from the University main gate. It occupies a 17 hectare of land on the eastern side of the city of Calabar, between the Great Kwa River and Calabar River. It was founded in 1975.

University of Uyo lies within the tropical rainforest zone between latitudes 4°58' and 5°05' N and longitudes 7°54' and 8°00' E. The annual rainfall of the area is about 2,450mm, mean annual temperature varies between 28.48°C and 30.18°C and mean relative humidity is 74.8%. “The University of Uyo was established in October 1991 as a conventional federal university. It took over the premises, students and other assets and liabilities of the erstwhile University of Cross River State established in 1983. The University is in the heart of Uyo, capital of Akwa Ibom State, the largest oil producing state in Nigeria. Uyo is easily accessible by road and three International Airports within 150km radius, Calabar and Port Harcourt Airports and Uyo international airport about 12 km from the capital. University of Uyo has 12 faculties, School of Postgraduate studies, School of Continuing Education, School of Basic Studies and Remedial Studies as well as various Research centres”.

As reported in the school website, “Cross River University of Technology with the acronym CRUTECH was established in August 2002 by Cross River State Bill No. 9, which was amended as Bill No. 6 of 2004. The University is the outcome of the merger of three former tertiary institutions: The Polytechnic of Calabar, Calabar, The College of Education, Awi, Akamkpa and the Ibrahim Babangida College of Agriculture, Ovonum, Obubra, all owned by the Government of Cross River State of Nigeria. The University took off in October 2002 with five campuses located in Calabar, Akamkpa, Obubra, Ogoja and Okuku dotted over a distance of well over 300 kilometers from one end to the other. In September 2008, the University lost the campus at Akamkpa, leaving it with four. It did not, however, lose the programmes run in the campus at Akamkpa as they were transferred to the main campus in Calabar. The institution consists of eight faculties that offer [degree](#) courses at undergraduate and postgraduate levels. The Faculties, Departments and programmes in the multi-campus university are presently distributed in the various campuses. The two main assigned responsibilities of Cross River University of Technology are to produce high quality and well-trained graduates and researchers well equipped for the provision of quality life, food, fibre, and shelter for the people in a sustainable manner, using well researched techniques of Science and Technology. These are adequately

captured in the University crest (otherwise referred to as 'logo'), the University's motto, vision, mission and philosophy".

Akwa Ibom State University started in October 2000, when the State Government inaugurated a Committee for its establishment. The Committee which consisted of academics, technical experts and professionals submitted an interim report to the then State Governor in April 2001 and a final report in September 2001. According to the school website, "at conception; the university was to be located within Akwa Ibom State's Technology Triangle at the University Town. However, the administration of the Akwa Ibom State Government have changed the enabling law of the university into a multi-campus institution with the main campus at Ikot Akpaden, Mkpato Enin L.G.A and a second campus situated at Obio Akpa, Oruk Anam L.G.A. The Akwa Ibom State University has 6 faculties running undergraduate programmes. The goals of the university have been modified by the State Government in order to transform the university into a conventional university whose focus is not just Technology and Applied Science but also Arts. In line with this transformation, the name of the institution has been changed from Akwa Ibom State University of Technology (AKUTECH) to Akwa Ibom State University (AKSU)".

All the chosen universities in the study area are situated at the South-South education zone of Nigeria with the objective of training manpower for the country.

Population of the study

The population of the study comprised 3,976 academic staff in University of Calabar and Cross River University of Technology in Cross River and University of Uyo and Akwa Ibom State University in Akwa Ibom State. The breakdown of the population shows that there is 1,680 academic staff in University of Calabar, 1,262 in University of Uyo, 596 staff in Cross River University of Technology and 438 academic staff in Akwa Ibom state University (UNICAL, CRUTECH, UNIUYO, and AKSU Senior Establishment Unit 2017)

Sampling technique

The sampling techniques adopted for this study include simple random and accidental techniques. Simple random technique was employed to give all the departments the equal and independent opportunity of being selected. In doing so, the names of all departments have been written in a separate piece of paper and put in a container and thoroughly mixed. The researcher was blindfolded to dip his hand into the container and pick a paper. Through this the researcher got the first department, record and return same into the container. The process continued until two departments per faculty were selected. While accidental sampling technique was employed to select respondents for the study. In accidental sampling technique, there is no provision for the estimation of the representativeness of the sample. This means that the instruments were administered on any staff found at the time of sampling.

Sample

The Sample size was determined using Yamane's formula (2012) to ensure accurate representation of the entire population.

$$n = \frac{N}{1+Ne^2}$$

Equation 1

where:

n= sample size

N= finite population size

e= level of significance (0.05)

l= constant value

$$n = \frac{3976}{1 + 3976 \times 0.05^2}$$

$$n = \frac{3976}{1 + 3976 \times 0.0025}$$

$$n = \frac{3976}{1 + 9.94}$$

$$n = \frac{3976}{10.94}$$

$$n = 363.43 \cong 363$$

Thereafter, proportionate sample size for each university was obtained using the formula below:

$$\frac{p}{P} X n$$

Equation 2

where:

p= population for each of the sampled university

P= overall population

n= the calculated sample size for all universities

For University of Calabar:

$$\frac{1680}{3976} X 363$$

$$0.4225 X 363$$

$$n = 153.36 \cong 153$$

For University of Uyo:

$$\frac{1262}{3976} X 363$$

$$0.3174 X 363$$

$$= 115.22 \cong 115$$

For Cross River University of Technology:

$$\frac{596}{3976} X 363$$

$$0.1498 X 363$$

$$n = 54.41 \cong 54$$

For Akwa Ibom State University:

$$\frac{438}{3976} \times 363$$

$$0.1101 \times 363$$

$$= 39.99 \cong 40$$

From the calculation above, the sample size for this study was 363 academic staff and the proportionate sample size for each of the four universities were 153 for University of Calabar, 116 for University of Uyo, 54 for Cross River University of technology and 40 for Akwa Ibom State University. However, of the 363 administered copies of questionnaire for this study, only 315 respondents returned properly filled copies which were used for the data analysis. The breakdown of the distribution of respondents by demographic characteristics is table 1 shown below:

Table 1: Distribution of respondents by demographic characteristics

Demographic characteristics	N
Educational institutions: UNICAL	147
UNIUYO	98
CRUTECH	37
AKSU	33
Total	315
Gender: Male	210
Female	105
Total	315
Age: 30 years and below	49
31 – 35 years	21
36 – 40 years	144
41 – 45 years	59
46 years and above	42
Total	315
Education qualification: Bachelor Degree	49
Master Degree	98
Ph.D	168
Total	315
Rank: Lecturer	161
Senior Lecturer	56
Professor	42
Total	315

Source: Researcher’s Field Study (2017)

Instrumentation

The instrument (questionnaire) titled “role academics on waste management awareness in Cross River and Akwa Ibom State, Nigeria was designed by the researcher following the guidance of the supervisor and distributed to the respondents (lecturers).

Results

General description of research variables

Frequency and percentages were used to analyse the demographic variables (Institution; Gender; Age; Educational qualification and Rank) and the result is presented in Table 2 while mean and standard deviation was used for other variables and the result is presented in Table 3.

Out of the 315 respondents used in this study, 147 representing (46.7%) were sampled from University of Calabar; 98 representing (31.1%) were from University of Uyo; 37 representing (11.7%) were sampled from Cross River University of Technology while 33 representing (10.5%) were sampled from Akwa Ibom State University. In terms of gender, the table shows that, 210 representing (66.7%) were male while 105 representing (33.3%) were female. The distribution of the respondents based on age reveals that, 144 respondents representing (45.7%) are between the ages of 36 – 40 years; 59 respondents representing (18.7%) are between 41-45 years; 49 respondents representing (15.5%) are 30 years and below; 42 respondents representing (13.3%) are 46 years and above while only 21 respondents representing (6.8%) are between 31 – 35 years.

Table 2: Frequency and percentages of demographic variables

Variable		N	%
Educational institutions:	UNICAL	147	46.7
	UNIUYO	98	31.1
	CRUTECH	37	11.7
	AKSU	33	10.5
	Total	315	100
Gender:	Male	210	66.7
	Female	105	33.3
	Total	315	100
Age:	30 years and below	49	15.5
	31 – 35 years	21	6.8
	36 – 40 years	144	45.7
	41 – 45 years	59	18.7
	46 years and above	42	13.3
	Total	315	100
Education qualification:	Bachelor Degree	49	15.6
	Master Degree	98	31.1
	Ph.D	168	53.3
	Total	315	100
Rank:	Lecturer	161	51.0
	Senior Lecturer	56	18.0
	Professor	42	13.0
	Total	315	100

Source: Researcher's Field Study (2017)

Table 3: General description of variables

Variable	N	Mean	S.D
Roles played by academics	315	15.42	8.54

Source: Researcher’s Field Study (2017)

Out of the 315 respondents, 168 representing (53.3%) have bagged their Ph.D; 98 respondents representing (31.1%) have master’s degree while only a small proportion 49 representing (15.6%). Also, out of the 315 respondents’ 161 representing (51.0%) were in the rank of either Assistant Lecturer/ Lecturer 11 and Lecturer 1; 56 respondents representing (18.0%) were in the rank of senior lecturer while only 42 respondents representing (13.0%) were in the rank of Professor.

As presented in Table 3, the mean scores for the variable: Roles played by academics were 15.42. These mean values were used for the inferential statistics.

Hypothesis:

Academics do not play any significant role in improving waste management awareness in the educational institutions.

The independent variable in this hypothesis is academics categorised into three (lecturers) which comprises Assistant lecturer, Lecturer 11 and Lecturer 1; (Senior lecturer) and (Professor) while the dependent variable is roles of academics in waste management awareness, categorised into four (Research & Information; Educational and Awareness creation on best practices; Adoption of appropriate technology and financial support). The contingency chi-square (χ^2) statistic was used to test this hypothesis at 0.05 level of significance and the result is presented in Table 4.

Table 4 reveals that, the roles played by academics in waste management awareness differ based on their rank, (lecturers, senior lecturers and professor). This is because the calculated X^2 -value = 218.431 was greater than the critical X^2 -value of 12.59 at 0.05 level of significance with 6 degrees of freedom. This result implies that, the null hypothesis which states that, academics do not play any significant role in improving waste management awareness in the educational institutions is rejected while the alternate hypothesis is retained.

Table 4: Contingency Chi-square (X^2) analysis of roles played by academics in improving waste management (N=315)

Variable	Roles Played				Cal X^2	TOTAL
	Res/Inf	EACBP	AAT	Fin Support		
Lecturer	63 (39.1)	0 (0.0)	49 (30.4)	49 (30.4)		161 (100)
Senior Lecturer	56 (100)	0 (0.0)	0 (0.0)	0 (0.0)	218.08	56 (100)
Professor	42 (42.9)	49 (50.0)	7 (7.1)	0 (0.0)		98 (100)
Total	161	49	56	49		315

* significant at 0.05; df = 6; critical X^2 -value = 12.59

Key: Res/Inf = Research and Information

EACBP: = Education and awareness creation on best practices

AAT: = Adoption of appropriate technology

FinSupport: = Financial support

$Df = (R-1) (C-1)$

Where R = number of rows

C = number of columns

In our case, the number of rows is 3 and columns is 4, thus

$Df = (3 - 1) (4 - 1) = 2 \times 3 = 6; Df = 6$

The result as shown in Table 14 above is expected since academics can carry out some extra duties when they are in the status of senior lecturer and or professor.

Discussion of findings

In assessing the roles academics play in improving waste management in the educational institutions. The independent variable (academics) were categorised into three (lecturers) which comprises Assistant lecturer, Lecturer 11 and Lecturer 1; (Senior lecturer) and (Professor) while the dependent variable is roles of academics in waste management awareness, categorised into four (Research & Information; Educational and Awareness creation on best practices; Adoption of appropriate technology and financial support). The contingency chi-square (χ^2) statistic was used to test this hypothesis at 0.05 level of significance. This reveals that, the role played by academics in waste management differs based on their rank, (lecturers, senior lecturers and professor). This is because the calculated X^2 -value = 218.431 was greater than the critical X^2 -value of 12.59 at 0.05 level of significance with 6 degrees of freedom. This result is expected since academics can carry out some extra duties when they are in the status of senior lecturer and or professor.

This result ascertained the fact that the role of academics in improving waste management awareness is significantly associated with good governance being defined as “the process of administration, and more broadly, to the ways in which society manages its collective interest such as waste” (Imam, 2008). In school waste management system, the sole responsibility of the school administration is to make policy and legislations to promote sustainable waste handling from generation to recovery or landfill unit (van de Klundert, 2000). The result also supported the work of Uhuo and Zavodska (2010) that, “academics, local and state government are responsible for raising awareness on solid waste management issues often adopt seminars, conferences, workshops, training sessions as the most common techniques in creating awareness observed in the course of the survey in addition to environmental management topics included within educational institutions syllabus”.

The finding is in line with the fact that academics have in one way or the other educated most of the people in the society who are of high socioeconomic standard and influence in the society. This people can use their influence or experience/awareness to help develop waste management plans and get involved at community level (Armijo de vega, Benitez & Ramirez-Barreto, 2008). Universities bear a vicarious responsibility in

ensuring that sustainable plans and policies are imbibed in the society. Through their expertise Armijo de vega et al. (2008), noted that, “they have the capacity to increase awareness, knowledge, technology and tools necessary to promote and sustain best practices within and around the community in which they are located”. Comparing with the developing countries of the world particularly Nigeria, developed countries such as America and Europe have made great progress in terms of waste management both at the university and community levels. Developing nations with their peculiar challenges are still trailing behind in this regard.

Conclusion

The aim of this study was to find out academics’ role academics in improving waste management awareness in Cross River and Akwa Ibom State, Nigeria. In analysing the research hypothesis, the result shows that academics play significant role in improving waste management awareness in educational institutions.

Recommendations

Based on the findings from the research study, the following recommendations were proffered to increase awareness on effective management of waste in educational institutions:

1. There is urgent need for educational institutions to be organizing seminars and workshops on waste management for academic staff and students as well as administrative staff to enable more awareness creation on proper waste management methods.
2. Educational institutions should employ more skilled manpower to ensure effective waste management.
3. Educational institution’s waste management policies and strategies should be reviewed to meet the contemporary waste management needs.
4. There is need for cooperation among educational institutions to ensure checks on effective management of waste in the academic environment.
5. Finally, educational institutions should encourage digital system of teaching so as to reduce the volume of waste generated from papers and other studying materials.

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