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Office Waste Management and Sustainable Development in Tertiary Institutions in Ekiti State, Nigeria

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Abstract:
Organizations often operate without recourse to the intricate factors responsible for development. In the case of academic institutions, development is cumulatively driven by the economic, social, political and physical environment as well as the capacities of the people and their aspirations for a better life. These intricately combine to characterize the entire social-economy system within which development thrives. This paper reviews waste management practises as its impacts sustainable development in tertiary institution in Ekiti State. Guided by three research questions, the study examined perceived causes of the intractable waste disposal problem and possible solutions to reduce office waste and properly disposed inevitable ones. This paper adopted the use of questionnaire as a base for its primary source of data. The data collected from respondents were analyzed using simple percentage method. Three Hundred (300) questionnaires copies were administered to respondents which comprise selected staffs of the tertiary institution in Ekiti State, out of which Two Hundred and Ninety (290) of the questionnaires were returned for processing. It was found that, waste disposal habits of staffs and students, work attitude, inadequate plants and equipment among others are militating against effective waste management and by extension, sustainable development in the institutions. Based on the findings, it was concluded that despite the fact that illegal communal waste dumps indiscriminately located in public places have been officially cancelled, yet several illegal refuse collection points were indiscriminately created by staff and students. It was therefore recommended that action plans for proper waste management should be put in place by relevant authorities and sensitization of members of the campus community to the need for informed waste disposal should be given top priority.

Keywords: *Office waste, sustainable development, disposal, tertiary institution*

1. Introduction

The end of the 1990s saw a radical reappraisal of our concerns over resource availability and use, the institutional consequences of resource exploitation and the relationship between the office, employees and economic change. This re-appraisal has given rise to a new approach to office and development issues - an approach which seeks to reconcile employee's needs and the capacity of the office to cope with the consequences of economic system. This approach is called sustainable development.

Sustainable development is implied development without destruction: it is the judicious use of non-renewable resources for the present and future generations. In the context of sustainable development, non-renewable resources must be used at a judicious rate, neither too fast nor too slow but in a way as to ensure that the natural wealth that they represent is converted into long-term wealth as they are being used. In Nigeria, we succinctly put it as sustainable development without jeopardizing future development, meaning that in our efforts to explore and exploit natural resources for our benefit, there is an obvious paradox evident in ensuring development, while at the same time protecting the environment. It is important to note that there must be a balance between levels of development and the stock of consumables in offices, that is, development must be at a level that can be sustained without prejudice to the institutional environment or to future generations. Therefore if there is to be sustainable development in tertiary institutions in Ekiti State, the availability of land (for landfill), human resources, vegetation, equipment and other tools including capital must be readily available. An important responsibility of these institutions in maintaining sustainable development is to protect the environment for the next generation by cleaning up all types of waste, taking into consideration both the physical and population development of those institutions. In the context of this study therefore, waste management is defined as the collection, keeping, treatment and disposal of wastes in such a way as to render it harmless to employers, employees and students.

The development of an institutions hinges on the environmental, professional and social contribution of both staff and students in the office environment. To achieve sustainable development in tertiary institutions therefore, attention

should be paid to strengthening the bridge between conservation and recycling of waste materials because it plays a major role in promoting employees performance and institutional development. Managing office waste materials for sustainable development in tertiary institutions cannot be over-emphasized because it has been reported as capable of improving job efficiency and support for staff's productivity (Haruna, 2018).

The generation of waste and its disposal, collection, transport and processing are important for healthy ecosystems and the health of staffs and students. The practice of indiscriminate and improper dumping of waste is on the increase in tertiary institutions and has been compounded by negative attitude of staff, increase population of students, negligence of staff in charge of waste disposal etc. This problem is not peculiar to institutions alone but cuts across the country and it seems to emanate from consumables essentially. In office setting, there are wastes from discarded materials generated from unused document and abandoned equipment. The major problem caused by wastes in the office environment is pollution characterized by various types of solid wastes which include paper, textile plastic, metals, glass, wood, vegetal matter and food remnant of multiple consistency. A lot of problems such as inadequate number of vehicles, lack of spare parts, dearth of fund, poor technical know-how, poor maintenance practices, insufficient funding and lack of motivation has bedeviled the agency responsible for the disposal and collection of waste.

It has been pointed out that the generation of waste materials is a problem that is not peculiar to offices alone rather it is an issue of global concern. This study therefore set out to examine office waste management for sustainable development in tertiary institutions in Ekiti State.

The broad aim of this study is to examine how waste can be managed in offices for sustainable development in tertiary institutions in Ekiti State and also to evaluate the need to make sure that waste are properly disposed.

1.1. Research Questions

- How can waste be managed in the office for sustainable development?
- Does the staff of the institutions helping in the disposal of waste materials?
- Are waste materials properly disposed?

1.2. Concept of Sustainable Development

Sustainable development has been defined by different scholars from various perceptive. Umezulike and Okoye (2017) defined sustainable development as the state of having well balanced, steady and effective use of human, material and capital resources for total economic independence of a nation without compromising the future. Nwosu (2019), stated that the well-being of any nation largely depends on its sustainable economic development. Usoro (2017) defined sustainable development in terms of reduction in the levels of poverty, illiteracy, unemployment and income inequality. Kundan (2018) described sustainable development as a construct which envision development as meeting the needs of the present generation without compromising the needs of the future generations. Okala (2018) defined sustainable development as the attainments of number of ideas of modernization such as a rise in productivity, social and economic equity, improve institutions and values.

Abubakar (2016) asserted that sustainable development is a process of improving on the range of opportunities that will enable individual humans and communities to achieve their aspirations and full potentials over a sustainable period of time while maintaining the resilience of the economic, social and environmental system. Sustainable development therefore is where there are clean environment, good road networks, enough and adequate hospitals and health facilities, equal access to functional education opportunities, adequate security of lives and properties, job creation and industries as well as social security.

1.3. Waste

The federal environmental protection act (1988) does not define 'waste', however waste as the term implies is any solid, liquid or gaseous substances or materials which being a scrap or being super flows, refuse or reject, is disposed off or required to be disposed as unwanted, this is Environmental law, the term assumes it's ordinary literal meaning unlike in the real property Law, When' waste' is used as a term of art, having meaning completely different from its ordinary meaning. One of the few statues in Nigeria, which attempts to define waste is the Lagos State Environmental Edicts 1985, there in Section 32, waste is define as follows: Waste of all description.

- Any substance, which constitutes scrap materials or an effluent or other unwanted surplus substances arising from the application of any process.

George (2018) opined that waste is any substance which' constitutes a scrap material or an effluent or other unwanted surplus substance arising from the application of any process or any materials unused and rejected as worthless or unwanted. According to Ayodele (2017), waste is any substance or article, which requires to be disposed of as being broken, worn out, contaminated or otherwise spoiled. One thing to notice is that none of the above definitions of waste gives 'value' to the elements considered. There is no suggestion that the items, which constitute a waste, do not have value or is intrinsically useless. The word 'unwanted' which appears in the definition although it introduces its own problem, does not necessarily import a value element for a substance or material that may be unwanted notwithstanding that it has some value.

1.3.1. Office Waste

Appleby (2018) defined office waste as any substance or materials, which requires to be disposed of as being broken, worn out, contaminated, unwanted or otherwise spoiled. Accumulating office waste is inevitable. After all a lot of

paperwork, packaging and other materials go into making an office busy and profitable however, knowing more about the waste being generated and how to free up more space, time and even resources can make a huge difference in conservation and maintenance for sustainable development. Managing waste properly also has undeniable benefits for the environment and for the community. Offices can be kept clean and more productive with the right sorting and a reliable system for waste generation and management.

1.4. Types of Common Waste in the Office

These are the most common waste types found in offices according to Bamidele (2015).

- Paper and printing products: no matter how big or small a company, you can expect a lot of paper and printing product waste at the end of the day. These materials are essential to handling paperwork from simple meeting memos to business inventories.
- Office equipment: as time goes by, everything from desks to computers needs an upgrade. This makes office equipment a type of common office waste. However, office equipment is costly to both acquire and throw away because the bigger the waste the higher the skip bin needed.
- Miscellaneous waste: most offices have common areas such as pantry or water station. These places also receive a lot of traffic during break times and can generate a lot of waste as a result.
- Maintenance waste: such as cleaning supplies. With proper planning the different types of waste generated in the office can be expertly managed.

1.5. Major Classes of Solid Wastes

Smith (2016) asserted that Municipal solid wastes generally can be classified in terms of three major sources of generators: residential, commercial, and industrial. Sometimes, institutional sources are separated from commercial sources and, thus a fourth source is referred to as institutional. In the traditional scheme of classification, residential (domestic) solid waste consists of household garbage and rubbish, or refuse. The garbage fraction is mostly in the form of wastes derived from the preparation and consumption of food (e.g., meat and vegetable scraps). An alternate term commonly used to describe the garbage faction is 'putrescible.' In the traditional scheme, all wastes not classified as 'garbage' are classified as 'rubbish.' The major constituents of rubbish include glass, metal and plastic wastes, yard and garden debris, wastepaper and paper waste;

1.6. The Major Effects of Waste Materials in an Institution

- Environmental effects: The major environmental effects include air pollution, which includes odour, smoke, noise, dust, etc. Waste pollution – pollution from disposal site via flooding because of blocked drains and land degradation.
- Health effects: This includes flies which carry germs on their bodies and legs and also excrete them; mosquitoes breed in stagnant water in blocked drains in favorable location in cans, tyres etc. that collects rain water; Rats: rat's spreads salmonella, leptospirosis and other diseases they cause injuries by biting and spoil millions of tons of food. The refuse workers also faces some hazards which includes: parasite infection and infected cuts resulting from skin contact with refuse, other includes hazards on disposal sites; are injuries from glass, razor blades, syringes, tissue damage or infection through respiration, ingestion or skin contact.
- Conducive environment: when waste is properly managed then the office environment will be conducive for employee to carry out their duties effectively.
- Standard living: sustainable development can be achieved when the people standard of living increased based on clean and conducive environment, good health because health is wealth.

2. Perceived Causes of Intractable Waste Problem

Ayodele (2017) stated that there are many perceived causes of the intractable waste problem in institutions, among which are: Waste disposal habit of the staffs and students, attitude to work, lack of adequate equipment, plant and tools necessary for waste disposal and collection. population effect.

2.1. Waste Disposal Habit of the Staffs and Students

Ignorance may be responsible for the poor waste disposal habits of most of the staffs and students in higher institutions. It beats one hollow to see staffs or students defecating or urinating in broad daylight by the road side or at the back of the classroom when there are conveniences designated for such purposes. It is not uncommon to see individuals fling trash out of moving vehicles or classrooms or office windows when such trash could be properly disposed of in waste bins often placed in strategic locations all around campus. This negative attitude towards waste disposal it prevalent all over Nigeria as evidence of this can be seen every day by way of indiscriminate discharge of garbage into drainages and at times on the highways.

2.2. Attitude to Work

In Nigeria employee productivity is low due to certain factors including sociological factor, which is felt in the manifested lack of a sense of belonging in an organization, and the tendency by employees to perceive a job as another's business. This negative attitude to work has negatively impacted on the waste management efforts of management of many organizations. Staff poor attitude to work, poor coordination and inadequate communication among workers and

bureaucratic impediments and administrative hitches in institution saddled with solid waste management have resulted in chaos, confusion and ineffectiveness in delivery of many institutional services.

Inadequate vehicles, plant and equipment and tools necessary for waste management is also a major issue of concern in a waste management discuss. Waste disposed or deposited at designated points of collection has to be transported either to the transfer loading station where sorting is done or to the incinerator facility or sanitary landfill or the final disposal point. It has been logically proven that for effective and efficient collections system, there must be enough and wheel-maintained equipment such as trucks, tippers, pay loaders, bulldozers, sweepers, compactors and others.

Population growth has always affected waste generation, collection and invariably disposal. Current population growth in tertiary institutions has impacted negatively on both the environment and waste generation. The quantity of waste generated in institution is in proportion to population size- as population increases so also waste generated also increases. Population growth goes hand in hand with increased pollution and environmental decay thereby leading to a steady increase in the need for an increased number of vehicles and equipment for waste management.

Considering the perennial problem of waste generation and management as discussed in the fore going, it seems obvious that dynamic and proactive mitigating measures would have to be adopted in order to proffer solution that will not be merely superficial. Expanding recycling programs can help reduce solid waste pollution but the key to solving severe solid waste problems lies in reducing the amount of waste generated. It was noticed that only the landfill system of waste disposal is being generally adopted. Whereas in places where waste management has been successfully implemented, there are several methods of waste disposal used to ameliorate and mitigate the issue of population effect on waste management. According to Smith (2016), Such systems that can or may be adopted are:

- Recycling: This is processing of used materials (waste) into new, useful products or the action or process of converting waste into reusable materials. This is done to reduce the use of raw materials that would have been used. Also, recycling of materials would produce a fresh supply of the same materials and uses less energy and great way of controlling air, water and land pollution. Examples are used office paper would be converted into new office paper, used polystyrene foam into new polystyrene
- Incinerations: This method is mainly used to dispose of the medical waste
- Neutralization: This is chemical reaction in which acid and a base react quantitatively with each other.
- Secure sanitary landfill: this is a low-lying open area out of the city where garbage is collected and dumped.
- Composting: This is another way of recycling and it's quite easy as well. You can start composting with just a single bin and some spare space which can be fed back to your garden later. Excess food or other biodegradable elements do not go to waste, your garden gets an ample supply of nutrient and you have a decent feeling about your impact on the planet.

There are several possible ways of reducing the amount of waste generated through the official procedures carried out in the offices. Some of such are outlined below as opined by Okala (2018).

- Use both sides of the paper if not confidential: Document can be printed on both side of the paper if the documents are not confidential to reduce the numbers of paper that will use to achieve a particular task in the office.
- Reuse boxes from shipments and packages: Minimizing packing and reuse of boxes as much as possible in order to reduce waste.
- Segregate recycling paper products, gadget and equipment: Try to have a decent idea about recycling. No matter how complex or intimidating those recycling symbols might seem, it's actual quite simple to navigate the recycle system, once you have different standard for recycling, so make sure you know the specific rules eligible for your area because recycling is an essential step in reducing office waste.
- Distribute memos and draft documents via email: Try to go paperless i.e., achieving zero-waste might be a challenging task but going paperless is not a tough task like that in fact technologies today offers a better and cheaper alternative to the usage of paper. Many companies have seen the light of profits after going paperless, what is more astonishing is some of the newspaper producers are even planning to go paperless by getting rid of their printed version and relying solely on their online version.
- Store manuals, e.g., employee's handbook online: Manuals can be stored online and whenever it is needed, it can be transfer to the person in need of it online, this will go a long way to reduce waste in the office
- Acquire high quality durable equipment: make sure you strike a balance between saving costs in the future. More durable equipment often means less waste as there will be a slower turnover rate in equipment.

2.3. Empirical Review

George (2018) investigated on the Impact of Waste Materials on National Development in Nigeria with a sample size of 150 respondents, using descriptive method of analysis to gather data. It was found out that waste materials when properly managed helps to improve the development of a nation and increase the standard of living of the citizen.

Haruna (2018) conducted a research on Waste Management: A Tool for National Development in Nigeria, with a sample size of 300 respondent using survey method of analysis to gather data. Findings reviewed that waste materials can be used as an instrument for national development when properly handled. Kundan (2018) conducted research on Waste Management as an Instrument for achieving Sustainable Development in Lagos State, a sample size of 500 respondent was used. survey method of analysis to gather data. Findings reviewed that waste materials can be recycle and reuse and there by generating income to the state.

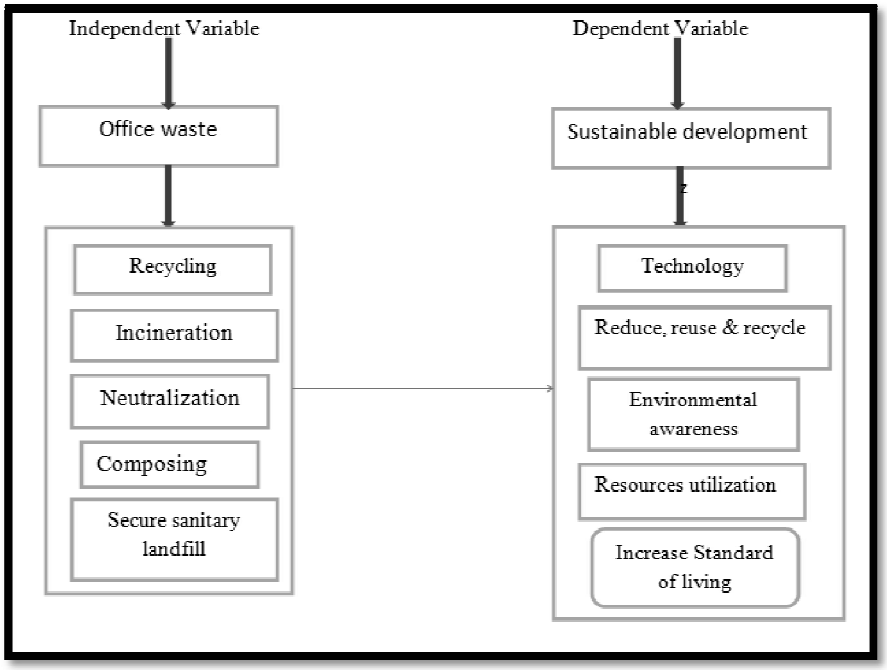
A research was conducted byOkala (2018), on the effect of Waste Management on Sustainable development in Nigeria: Results from a field study of 368 respondents show that the the effect of Waste Management has a positive relationship on Sustainable development. In view of the effect of waste management on national development, the government should take into account how to reuse and recycle this waste to improve economic development in a nation.

The study conducted byAyodele (2017), Waste Management and Environmental Policy Assessing the issues and developing solutions for policy and practice. Seventy-two (72) respondents were use as sampling, result shows that waste management and environmental policy helps to guide against environment pollution and thereby leads a means of generating income for the government.

A research study conducted byUmezulike S. V. and Okoye R. J. (2017*)*, onThe Effect of Inadequate Equipment on waste disposal in south west state in Nigeria. A multiple-indicators and multiple-causes analysis of data collected from 190 respondents in 21 local government within the southwest state in Nigeria found to support the proposed conceptualization. Thus, findings review that most state in Nigeria have inadequate equipment for proper disposal of their waste.

Usoro (2014). conducted research on the Relevance of Waste Disposal on Sustainable development in Nigeria with a sample of 175 respondents, using survey method of analysis to gather data. Findings reviewed that proper disposal of waste enhances sustainable development in the state.

2.4. Conceptual Framework



. *Figure 1: Conceptual Framework*
Source: Researcher Design 2021

The conceptual framework in figure 1 above shows that the model has two variables: the dependent variable as sustainable development and independent variable as office waste, these two variables are used for this study. The measures of sustainable development are technology, reduce, reuse and recycle, environmental awareness, resources utilization and increase standard of living and it was adopted from George (2017). The independent variable for this study is office waste which will be measure with recycling, incineration, neutralization, composing and secure sanitary landfill. The research identified the five measures of office waste in which all the five measures were adopted from the work of Smith (2017) as it is relevant to the study.

3. Methodology

3.1. Research Design

The study employed the survey research design. According to George (2017) survey is the investigation of behavior, opinion or other manifestation of a group of people by questioning them. The study aims at collecting, analyzing data in adequate way for the giving population of the study. The main source of data was through administration of questionnaires. The data collected from respondents were analyzed using simple percentage method.

3.2. Sample and Sampling Techniques

A total of Three Hundred (300) management and selected senior staffs from Tertiary Institution in Ekiti State were used for the study. Three Hundred (300) questionnaire copies were administered to respondents which comprises of selected senior staffs of the Tertiary Institution in Ekiti State. The questionnaires were distributed to the following

institution, fifty (50) to The Ekiti State University, Fifty (50) to The Federal University Oye-Ekiti (50) to Afe-Babalola Ado-Ekiti, Fifty (50) to the Federal Polytechnic Ado-Ekiti, Fifty (50) to College of Education Ikere-Ekiti, Fifty (50) to the Crown Polytechnic Ado-Ekiti. Out of which Two Hundred and Ninety (290) of the questionnaires were returned for processing.

3.3. Validation of the Study Instrument

A drafted copy of the study instrument (questionnaire) was submitted to two Directors in Federal Polytechnic Ado-Ekiti for face and content validation. Input from these resource persons were taken for consideration and necessary changes were affected.

3.4. Reliability of the Instrument

Once the validation of the study instrument was established, then 10 copies of the validated instrument was administered to respondents who were not parts of the sample using the test-retest reliability method. The duration between the initial test (administration) and the final administration of the instrument on these selected respondents was two weeks.

3.5. Data Analysis

The data collected were presented in tables. The data collected from respondents were analyzed using simple percentage method. In computing the percentages, the total number of respondents to a particular item was divided by the total number of questionnaires returned and then multiplied by hundred. The methods used for the analysis is as follows:

$$\frac{F}{N} \times \frac{100}{1}$$

Where F = frequency of Responses
Where N = total number of respondents
100 = percentage figure
1 = constant figure

- Research question 1: How can waste be managed in the office for sustainable development?

S/N	Question	Total responses	Yes	%	No	%
1.	Does recycling of waste helps to promote sustainable development in your institution	290	270	93.1	20	6.9
2.	Covering of waste with cover materials on daily basis helps to control the rate of hazards from exposed waste	290	260	89.7	30	10.3
3.	Waste material that are pour to block the drainage can affect the development in an institution	290	250	86.2	40	13.8
4.	Does introduction of paperless office helps to promote sustainable development in your institutions	290	280	96.6	10	3.4
5.	Can open dump helps to reduce waste materials in your institutions?	290	230	79.3	60	20.7

Table 1: Office Waste Management for Sustainable Development?
Source: Field Survey (2021)

3.6. Interpretation of Data

The above table shows that 270(93.1%) of the respondents were in affirmative 'yes' to the fact that recycling of waste helps to promote sustainable development in the institution while 20(6.9%) of the respondent said No. Also, 260(89.7%) of the respondents were in affirmative 'yes' to the fact that covering of waste with cover materials on daily basis helps to control the rate of hazards from exposed waste while 30(10.3%) of the respondent said No.

The table further indicate that 250(86.2%) of the respondents agreed that Waste material that are pour to block the drainage can affect the development of an institution while 40(13.8%) respondents disagreed. It was also discovered from the table that 280(96.6%) of the respondents agreed that introduction of paperless office helps to promote sustainable development in your institutions 10(3.4%) of the respondents disagreed.

Finally, the table shows that 230(79.3%) of the respondents indicated that open dump helps to reduce waste materials in your state while 60(20.7%) of the respondent indicated negative answer.

- Research Question 2: Does the staffs of the institutions helping in the disposal of waste materials?

S/N	Question	Total Responses	Yes	%	No	%
1.	Are the Staff of your institution helping in proper disposal of waste materials	290	140	48.3	150	51.7
2.	Do they know the effect of properly disposing their waste	290	200	69	90	31
3.	Are the staff supporting the waste management authority to make sure that waste materials are properly disposed	290	100	34.5	190	65.5
4.	Do population growth affect waste generation, collection and disposal in your institution	290	270	93.1	20	6.9
5.	Does ignorance affect the habit of people dumping waste materials anywhere in your institution	290	200	69	90	31

Table 2: The Staff Attitude towards Waste Disposal
Source: Field Survey (2021)

3.7. Interpretation of Data

From the table of above, it was realized that 140(42.9%) of the respondents indicated positive answer that the staff of the institution are helping in proper disposal of waste materials while 150(51.7) of the respondents answer negatively. Also, 200(69%) of the respondents answered positively 'yes' that they know the effect of properly disposing their waste while 90(31%) of the respondents answered negatively.

Furthermore, the table shows that 100(34.5%) of the respondents said that the staff are supporting the waste management authority to make sure that waste materials are properly disposed while 190(65.5%) indicate negative answer. The table also reveals that 270(93.1%) of the respondents aid that the population growth affect waste generation, collection and disposal while 20(6.9%) of the respondents responded negatively

Finally, the table shows that 200(69%) of the respondents indicated that ignorance affect the habit of people dumping waste materials anywhere in the institution while 90(31%) of the respondent indicated negative answer.

- Research Question 3: Are waste materials properly disposed?

S/N	Question	Total Responses	Yes	%	No	%
1.	Are waste materials properly disposed in your institution	290	100	34.5	190	65.5
2.	Does an expanding recycling program help to reduce waste pollution in your institution	290	250	86.2	40	13.8
3.	Are the waste management authority in charge of waste collection and disposal doing their work effectively	290	150	51.7	140	48.3
4.	Are there adequate equipment for waste collection	290	150	51.7	140	48.3
5.	Does improper dispose of waste materials affect the health and safety of human being in your institution	290	190	65.5	100	34.5

Table 3: Proper Disposed of Waste Materials
Source: Field Survey (2021)

3.8. Interpretation of Data

From the table of above, it was realized that 100(34.5%) of the respondents indicated positive answer that waste materials are properly disposed while 190(65.5) of the respondents answer negatively. Also, 250(86.2%) of the respondents answered positively 'yes' that that an expanding recycling program help to reduce waste pollution in the institution while 40(13.8s%) of the respondents answered negatively.

Furthermore, the table shows that 150(51.7%) of the respondents said the waste management authority in charge of waste collection and disposal are doing their work effectively while 140(48.3%) indicate negative answer. The table also reveals that 150(51.7%) of the respondents said that there adequate equipment for waste collection while 140(48.3%) of the respondents responded negatively

Finally, the table shows that 190(65.5%) of the respondents indicated that improper dispose of waste materials affect the health and safety of human being in the institution while 100(34.5%) of the respondent indicated negative answer.

3.9. Key Findings

- The finding reveals that that recycling of waste helps to promote sustainable development in the institution.
- It was also found that, waste disposal habit of the staff, work attitude, inadequate plants and equipment among others are militating against effective waste materials to attain sustainable development in institution as a whole.

- Improper dispose of waste materials affect the health and safety of human being in the institution The finding of this review will be useful to researchers, government stakeholders and professionals working in the area of waste to energy, recycling, material recovery and climate change.

4. Conclusion

The availability and nearness of disposal sites will greatly enhance and improve the habit of dumping waste 'anywhere and everywhere'. Research and development into areas of better waste handling method may also go a long way to assist in elaborating and interjecting the situation. Nigeria has very little or nothing to showcase for as her achievements in the area of proper waste management. Heaps of refuse is also commonplace in the campus, particularly places excavated to obtain sand for road construction. In Institutions where there is organized refuse collection, the disposal of such wastes is usually open dumpsites, located far from classes or office areas. Such dumpsites (called landfills) are not provided with environmental safeguards, and the leachates from them percolate freely into streams and the groundwater system.

The non-sustainability of the institutional development is as result of neglect of waste materials and the office environment. Despite the facts that illegal communal waste dumps indiscriminately located in public places have been officially cancelled by institutional management yet several illegal refuse collection points, were indiscriminately created by employees who pose health hazard and loss of environment aesthetics.

5. Recommendations

Based on the findings above, it is therefore recommended that:

- In term of population, there is an urgent need for action plans and education by the management in order to monitor and control waste expected in the institution.
- Government should expand recycling programmes through the activities of scavengers among others (Waste-to-wealth). Landfills management and control; Waste-to-energy programs can be generated through the landfills (Generation of Methane Gas).
- Institutional management should purchase updated equipment; there is an urgent need for well trained staff, vehicles, trucks, tipper, pay loaders, bulldozer and sweeper, which must be backed up with well stocked maintenance store provided for spare parts for all equipment.
- Management should organized refuse collection. There must be a disposal site in every institution and avenue nearest to the sources of waste, which must be accessible by everyone and the collection should be daily and regularly
- The management should at least provide one domestic waste incineration plants in every institution with a daily waste treatment capacity which can generate electricity through incineration so as to recover the energy out of the waste.

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