

## PATTERN OF SOLID WASTE GENERATION AND MANAGEMENT IN HOSPITALITY INDUSTRIES: CASE STUDY OF ILARO, OGUN STATE.

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### ABSTRACT

*This research examined pattern of solid waste generation and management in selected hospitality industries in Ilaro Township, with a view to looking at the type, size, rate, volume and composition of solid wastes being generated as well as the management method adopted among other vital issues. A total number of forty (40) hotels and resorts were identified from which twenty (20) were randomly selected, which were further classified into four (4) major categories of Hotels, Guest houses, Bars and Canteens or Restaurants. Both primary and secondary sources of data collection were used to obtain relevant information for the study with a structured questionnaire as an instrument of data collection. Twenty (20) structured questionnaires were administered to the selected hospitality industries in the study area. Analysis was done using descriptive method to ensure in-depth explanation of the findings. At the end, it was discovered that majority (75%) of the surveyed respondents (industries) did not take proper management of wastes generated so serious; also there are differences in the sizes or volume of wastes generated among these Industries which ranges between 40% (hotels and guest houses) and 60% (bars and canteens or restaurants). Likewise, the composition of wastes generated differs significantly where food remnants takes about 45% and nylon (30%), plastic bottles (15%), others (10%). Based on the findings, it was recommended that there should be an Institutional/Legal/framework for proper implementation of the national solid wastes generation and management policy. A regular educative programme on the importance of proper wastes management was equally recommended as well as monitoring exercise on the defaulters by the health officials among others.*

**KEYWORDS:** *Solid wastes, Generation, Management, Hospitality Industries*

### 1.0 INTRODUCTION

The degradation of the environment has increased tremendously with the industrial revolution. The environment of man plays more important role on man's health than all kinds of diseases one can think of. However, according to Olokesusi (2007), human

activities for satisfying such needs as food, shelter, mobility, as well as aesthetic quality of life invariably lead to waste being generated. These wastes generated need to be disposed off ultimately in such a way as not to constitute nuisance (or any environmental pollution). Also, Adegoke (2000) pointed out that waste(s) are unwanted or any

substance which is discarded after primary use, and which the owner no longer wants at a given place and time.

However, Probert (2000), defined solid waste as any useless and unwanted products in the solid state derived from the activities of people. Solid waste is usually identified as the following terms:

- Garbage: the term given principally to food waste, but may include other degradable organic wastes.
- Rubbish: consists of combustible and noncombustible solid waste, excluding food wastes.
- Refuse: it is the collective term for solid waste, which includes both garbage and rubbish.
- Litter: this includes bits of paper, discarded wrappings, bottles etc. left lying around in public places.

Furthermore, Ayeni (2004) pointed out that there are many sources of solid waste generation, and this could be classified into: domestic, industrial and natural waste. Domestic wastes which comes from household and hospitality industries, where there are thrown away and takeaway packages. About 75% of solid wastes generated are domestic waste, as a result of this generation; managers of solid wastes have resulted to shortcut, thereby creating problems for the environment. The practices of substitute paper wrappers in the kitchen, papers, napkins, hand towels, cellophane and nylons e. t. c are some of the common solid wastes found in the hospitality industries in Nigeria today. If these solid wastes are not properly disposed, could result to health and environment problem. Adewale (2003), pointed out that waste management and environmental protection involves the collection, processing or disposal of wasted materials, usually produced by human activities, involving the hospitality industries, in an effort to reduce their effect on man.

However, it is important to note that the perspective to solid waste and solid waste management has changed from the view of solid waste as an unwanted material, to a resource in a long location. Solid waste has been conceptualized into wealth, and this has made solid waste treatment issue of great importance in waste management. However, Powers (2008), defined hospitality industries as a broad category of fields within service industry, that includes lodging, event planning, transportation and additional within the tourism industry. He also describes it as an industry that depends on the availability of leisure time. According to him, examples of hospitality industries include: hotels, restaurant, amusement parks, guesthouses, e. t. c. consisting of multiple groups such as facility maintenance, and direct operations (servers, house keepers, kitchen workers, management, human resources and so on). Dodgshun (2004), pointed out that hospitality industries has over the years undergone high level of patronage due to the socio-economic characteristics of the people and has been a major indicator for an increase in waste generation. It is therefore imperative to understanding the industry in terms of its waste generation, disposal and management, in order to ensure environmental sustainability. Hence, the goal of the research is to study the pattern of solid waste generation, disposal and management in hospitality industries of Ilaro Township.

## 2.0 LITERATURE REVIEW

### 2.1 Solid Waste Management and Hospitality Industries

Edward (2007) observed that poor solid waste management has resulted in ever increasing heap of solid waste often found around most hospitality industries in Nigeria today. Oyediran (2002) notes that the visible features of most hospitality industries in Urban Centres in Nigeria today is the refuse

“mountains” which emit foul odors, as well as a breeding ground for pathogenic agents. Dodgshun (2004), observed that solid waste management problems in most hospitality industries has become very serious. According to him, this informed various conferences organized by the United Nations Environment Programme (UNEP) in Nigeria which were geared towards the effects of environmental pollution arising from poor solid waste management system. He observed further that the need to tackle the poor environmental condition in most hospitality industries in Nigeria underlines the call by United Nations on all the member nations to devise effective solid waste management strategies.

The role of health education amongst the various hospitality industries in waste management in Nigeria cities has been emphasized by some researchers. Dodgshun (2009) emphasized the need for health education on proper management and recycling of solid wastes in most hospitality industries in Nigeria. He observed that a number of health hazards in Nigeria such as dysentery, typhoid, cholera, Malaria etc. have been associated with poor solid waste management: noting that most solid waste generated by the hospitality industries are some of the major causes of these health hazards. He urged that policy makers should encourage health education in order to expose the danger of improper disposal of solid waste that is rampant in most hospitality industries in our cities.

Babayemi (2009), observed that as urban population increases, and solid waste composition becomes more non – bio gradable with high recycling and re-uses values, the role of informal labor solid waste management is more pronounced. This is because informal labor solid waste collection activities open up a wide range of economic opportunities.

Probert (2000), noted that in most hospitality industries in the cities and rural areas in Nigeria the menace of solid waste have posed great environment problems due to the inability of the solid waste management agencies to carry out their responsibilities. He observed that despite the government involvement in solid waste management, there has been no remarkable improvement amongst most hospitality industries in Nigeria.

Doan (2003), observed that one of the most pervasive problem of contemporary hospitality industries in all regions of the world, especially the developing countries is solid waste management problems accentuated by process of urbanization and urban development.

Adewale (2003), observed that most towns and some rural areas in Nigeria has been made inhabitable due to indiscriminate disposal of solid wastes by most hospitality industries its poor implementation of legislation on solid waste disposal, inconsistency in solid waste collection by their various States Environmental protection Agency, as well as the activities of town planning officials towards plan approval.

Buckets and Smith (2000), enumerated the consequence of indiscriminate disposal of solid waste. According to them, “uncollected” solid wastes often end up in drains, causing blockages which results in flooding and unsanitary conditions”.

## **2.2 Solid Waste Management Programme**

The foundation for any solid waste management program is the three R’s- Reduce Reuse, and Recycle. Typically, the initial goal is to reduce solid

waste materials by never acquiring them in the first place (Adewale, 2003).

Depending on the property type and customer base, implementing some basic solid waste management changes in hospitality industries could pay big dividends. There are many ways to reduce solid waste in the hospitality industries. There are several undeserved amenities such as daily newspapers, magazines, etc., which should be provided only upon request: thus, reducing the amount of solid waste produced and saving money by eliminating unnecessary purchases. As much as about 80% of the solid waste produced in the hospitality industries is recyclable, however, recycling bins must be conveniently located for the people patronize to use them. Environmental issue is administered by the ministry of environment at the Federal and State levels with the environmental health department at Local level. Establishment legislation relating to solid waste management include: - the harmful waste act 1988, Environmental impact act 1992. However, the agency in charge of solid waste in the study area (i.e. at the local level) is the Medical and health department, created through an Act of house of Assembly in 2007. Its roles include:

- (i) To ensure proper waste management within their area of jurisdiction
- (ii) To control environmental factors that affects the socio- economic and health of the residents within their area of jurisdiction
- (iii) To enhance community 's mobilization towards hygiene and health education
- (iv) To make sure that diseases that could result from wastes are being prevented within the area of jurisdiction
- (v) To ensure safety of the workers on their jobs.

### **2.3 Solid Waste Disposal and Management Problem in Nigeria**

Nigeria had been aware of the solid waste disposal problems especially in urban center, and his can be backed up with the statement that there had been tremendous increase in the volume and rate of waste generated daily in Nigeria within the past few years, and it can be attributed to increasing rate of population, urbanization and advancement in technology. One can then conclude that all these led to the establishment of some bodies, in which some are no more. WAI (War against indiscipline), MAMSER (Mass Mobilization for social End economic Recovery) was introduced. All of them were concerned with the upgrading of our environment, but with all these, the problem of solid waste disposal and management still priest. It was observed that in many Urban and rural cities, the arrangements for waste disposal had been ineffective. Some researcher in Nigeria considered landfills as the best way to dispose solid waste while some went in for composting but all these had their side effect. There are problems generated while trying to solve problems. The news was heard of how cholera is eating up the life of people most especially in Lagos and part of OGUN state all due to the poor solid waste disposal and management method.

Another issue was as a result of the creation of local government in which some rural areas are being converted to unplanned urban areas leading to the lack of adequate provision solid waste disposal which simultaneously led to indiscriminate dumping of refuse. It is obvious that solid waste disposal in Nigeria remains and environment problems that becomes more complex day-by-day, yet these problem needs to be addressed for survival of Nigerians.

### 3.0 CONCEPTUAL FRAME WORK

#### Concept of Waste and Solid Waste

According to Gilpil (2001), waste is any matter whether liquid, solid, gaseous or radioactive which is discharged, emitted or deposited in the environment in such volume, constituency, or manner so as to cause an alteration of the environment. He describes that the concept of waste embraces all unwanted and economically useable by products at any given place and time, and any other matter which may be discharged accidentally or otherwise in the environment.

However, waste according to the World Health organization (W.H.O) can be defined as something which is no longer in use, or which the owner no longer wants at a given place and time, and which has no current or perceived marked slope. Sandal, (2001), also describes waste to include all items that people no longer have any use for, which they either intend to get rid of or have discarded.

Solid waste(s) according to Probert (2000), refers to the useless and unwanted product in the solid state, derived from the activities of man. However, it is produced either by product of production process, or arise from the domestic or commercial sector when objects or materials are discarded after use. Solid waste is usually generated in homes, commercial area e.g. market, school, hospitality industries etc. Thus, all our daily activities can give rise to large variety of different solid wastes arising from different sources. Solid waste management is the rate at which these wastes are disposed off properly. Solid waste is usually said as the following terms:

- Garbage: the term given principally to food waste, but may include other degradable.
- Rubbish: consists of combustible and non-combustible solid waste, excluding food waste.
- Refuse: it is the collective term for solid waste, which includes both garbage and rubbish.
- Litter: odds and ends, bits of papers, discarded wrappings, bottles etc, left lying around in public places.

#### 3.1 Concept of Solid Waste Management

Solid waste management according to Taiwo (2011), is a systematic control of generation, storage, collection, transportation, separation, processing, recovery and disposal of all kinds of wastes. In Nigeria, solid wastes are generated in homes, commercial area e.g. market, schools, hospitality industries etc. Thus, all our daily activities can give rise to large varieties of different solid wastes arising from different sources. Solid waste management is the rate at which these solid wastes are disposed off properly.

#### 3.2 Concept of Hospitality Industry

When most people think of hospitality industry, they usually think of hotels and restaurants. However, the true meaning of hospitality is much broader in scope.

According to the Oxford English Dictionary, hospitality means “the reception and entertainment of guests, visitors or strangers with liberality and good will.” Hospitality, then, not only includes hotels and restaurants but also refers to other kinds of institutions that offer shelter, food or both to people away from their homes. It also includes

private clubs, casinos, resorts, attractions and so on (Powers and Barrows, 2009).

#### **4.0 RESEARCH METHODOLOGY AND POPULATION**

The sources of data used for this research are **Primary and Secondary Sources.**

Primary sources of data include personal observation and the use of questionnaire administration on the staff and patronizers of the hospitality industries in the study area, while secondary source includes information from published textbooks, journals, magazines, newspapers, official gazettes, conference paper, as well as unpublished materials, such as past project dissertation on relevant field of study.

In the study area, forty (40) hospitality industries were identified whereby 20(twenty) were randomly selected for the purpose of this study and twenty (20) questionnaires were administered to the selected hospitality industries accordingly.

#### **4.1 Method of Data Analysis & Research Instruments**

Data gotten from this study was analyzed and results are presented in form of table using descriptive and simple percentage techniques for the interpretation of results. While questionnaire was used as the major instrument of data collection.

**Table 1: List of Identified Hospitality Industries in The Study Area and Their Location.**

S/N	Name of Identified Hospitality Industries	Categories and Location
1.	Yewa Frontier	Hotel-Ilaro/Ibese Road, Ilaro
2.	Ellysam	Hotel-GRA Ilaro/Ibese Road, Ilaro
3.	IBD	Hotel-Ikosi Quarters, Ilaro
4.	Marvelous	Hotel-Tunde Ibikunle Road
5.	Olap	Hotel-Temidire Quarters, Ilaro
6.	Mabros	Hotel-Poly Express Road, Ilaro
7.	Glorious	Hotel-Tunde Ibikunle Road, Ilaro
8.	Mabelink	Hotel-Oke-Ola Quarters, Ilaro
9.	April Suite	Hotel-Oke-Ola Quarters, Ilaro
10.	OTS	Hotel-Poly Express Road, Ilaro
11.	LS	Hotel-Corner Afolabi, Oke-Ela, Ilaro
12.	Yemmydeen	Hotel-Oke-Ela, Ilaro
13.	Citi Place	Hotel-Poly Express Road, Ilaro
14.	Afobaje	Hotel-Ilaro/Papalanto Road, Ilaro
15.	FPI-Accommodation Demonstration Centre	Guest House- The Federal Polytechnic, Ilaro
16.	School II	Guest House-Off Tunde Ibikunle Road, Ilaro.
17.	Wallex-Inn	Guest House – Off Ilaro/Oja-Odan Road, Ilaro.
18.	Stop Over	Guest House- Gbogidi Ilaro.
19.	Oja Sope	Guest House – Oke-Ela, Ilaro

20.	Dolad	Guest House- Ona-Egbo Road, Ilaro
21.	Home Away from Home	Guest House- Off Poly Express Road, Ilaro
22.	God’s Heritage	Guest House- Oke-Okuta/Ileba, Ilaro
23.	Seyifunmi	Guest House- Oke-Ela, Ilaro
24.	Wonuola Inn	Guest House- Gbogidi, Ilaro
25.	FPI Staff Club	Bar/Relaxation – Federal Poly, Ilaro
26.	Recreational Club	Bar/Relaxation – Opp. YSLG Secretariat, Ilaro.
27.	Zone 2	Bar/Relaxation – Lower Leslie/Aderogun, Ilaro
28.	IAB	Bar/Relaxation- Upper Leslie, Road, Ilaro.
29.	AK-B Marble Lodge	Bar/Relaxation – Oke-Ola Quarters, Ilaro
30.	Stomata	Bar/Relaxation – Poly Express Road, Ilaro
31.	De-Place	Bar/Relaxation – Tunde Ibikunle Road, Ilaro
32.	Yhomis	Bar/Relaxation - Poly Express Road, Ilaro
33.	Mercy of God	Bar/Relaxation – Ona-Egbo Road, Ilaro
34.	Kumattel	Bar/Relaxation – Oke-Ela, Ilaro
35.	Up-I-Go	Canteen/Restaurant – Federal Poly, Ilaro
36.	Asiri-Abo	Canteen/Restaurant – Along Post Office Road, Ilaro
37.	Tokotaya	Canteen/Restaurant – Opposite Access bank, Ilaro.
38.	Put More Royal Garden	Canteen/Restaurant – Gbogidi, Ilaro
39.	Iya Modinah	Canteen/Restaurant - Lower Leslie/Aderogun, Ilaro
40.	St. Gole	Canteen/Restaurant – Ilaro/Oja-Odan Road, Ilaro

**Source:** Researchers’ Field Survey (2020).

### 5.0 RESULTS AND DISCUSSION

Here the researchers present and analyze the data collected based on the study.

However for proper understanding, classification of likely possible solid wastes from hospitality industries were presented in table 2, according to their composition.

**Table 2: Classification of likely possible solid wastes**

<b>Types/Kind</b>	<b>Composition</b>
Garbage	Wastes from food preparation, Market wastes, wastes from handling storage and distribution of produce.
Rubbish	1. Combustible – Cartons, Paper, Wood and Tree branches. 2. Non-Combustible – Glass, Plastics, Metals and Other dirt’s.
Ashes	Residue from cooking fires and incineration.

**Source:** Researchers’ Field Survey (2020).

Also in table 3, the selected hospitality industries for the study were presented based on their categories, types or groups.

**Table 3: List of selected hospitality industries in the study area based on categories and their location.**

**Categories and Location**

<b>Hotel and Location</b>	<b>Guest House and Location</b>	<b>Bar/Relaxation Centre and Location</b>	<b>Canteen/Restaurant and Location</b>
Yewa Frontier – Ilaro/Ibese Road, Ilaro	FPI Guest House – Federal Poly, Ilaro.	FPI Staff Club – Federal Poly, Ilaro	Asiri-Abo – Along Post Office Road, Ilaro.
Ellysam – GRA Off Ilaro/Ibese Road, Ilaro	School II – Off Tunde Ibikunle Road, Ilaro.	Recreational Club – Opposite YSLG Secretariat, Ilaro.	Tokotaya – Opposite Access Bank, Ilaro.
IBD – Ikosi Quarters, Ilaro	Seyifunmi – Oke-Ela, Ilaro	Ak-B Marble Lodge – Oke-Ola Quarters	Put More Royal Garden – Gbogidi, Ilaro.
April Suite- Oke-Ola Quarters, Ilaro	Wallex Inn – Off Ilaro/Oja Odan Road	IAB – Leslie Road, Ilaro	Up-I-Go – Federal Poly, Ilaro
LS- Corner Afolabi Oke-Ela, Ilaro	Home Away from Home – Off Poly Express Road, Ilaro.		
Mabros-Poly Express Road, Ilaro			
Mabelink-Oke-Ola quarters, Ilaro.			

**Source:** Researchers’ Field Survey (2020).

Composition of solid wastes generated from the selected hospitality industries in the study area. Here Table 4, presented the different composition of generated solid wastes from the selected hospitality industries.

**Table 4: Composition of solid wastes**

S/N	Industries: types	Wastes composition	Percentage %
A	Hotels & Guest house	Food wastes, Tissue papers, Condom, Plastics, Metals cans and other dish.	40
B	Bar & Canteen/Restaurant	Food wasters, bottles, plastics, papers, nylon, metal cans, residue and cooking fires.	60

**Source:** Researchers’ Field Survey (2019).

Table 4 above shows that there are significant differences in the types of wastes compositions generated from the selected industries accordingly. Wastes composition in both Hotels & Guest houses are similar and they constitutes about 40% while that of Bar & Canteen/Restaurants Constitutes about 60% and of the same similarly.

- **Volume of Wastes Generation among the Selected Industries in the Study Area.**

The volume of generated wastes among the selected industries were presented in Table 5 below by the researchers as part of information gathered during the study.

**Table 5: Volume of wastes generation among the selected Industries**

**Categories of Industries and Volume of generated wastes.**

Hotels	Rate (Kg)	Guest House	Rate (Kg)	Bar	Rate (Kg)	Canteen	Rate (Kg)
Yewa Frontier	120-260	FPI	50-120	FPI Staff Club	30-180	Asiri-abo	100-340
Ellysam	120-360	School II	50-180	Recreation club	50-200	Tokotaya	100-340
IBD	120-400	Seyifunmi	100-300	AKB Marble Lodge	50-120	Put more Royal	50-120
April Suite	50-120	Wallex Inn	50-100	IAB	50-150	Up-I-Go	30-180
LS	50-120	Home-away from Home	50-120				
Mabros	50-180						
Mabelink	50-180						

**Source:** Researchers’ Field Survey (2019)

In table 5, Volume of generated wastes among the selected Industries were presented which shows differences in information obtained during the study, it was gathered that the volume of wastes generation was based on the level of patronage among the selected Industries.

- **Effectiveness/Efficiency in the Management of Wastes Generation.**

Table 6 display and show attitudes of selected Industries in the management of generated wastes.

**Table 6: Categories of Industries and Assessment based on Researchers’ Observations.**

Hotels	Assessment	Guest house	Assessment	Bar	Assessment	Canteen	Assessment	Summary (%)	
Yewa Frontier	E	FPI	E	FPI Staff Club	P	Asiri-abo	P	E	P
Ellysam	E	School II	E	Recreation club	P	Tokotaya	P		
IBD	E	Seyifunmi	P	AK-B Marble	P	Put-more	P		
April Suite	P	Walex Inn	P	IAB	P	Up-I-Go	P		
LS	P	Home-away from Home	P						
Mabros	P								
Mabelink	P							25	75

**Source:** Researcher’s Field Survey (2019)

**Note:** E – Effective or Good Management (25%);  
P – Poor or Bad Management (75%)

From Table 6, based on the assessment or rating carried out by the researchers, it was discovered that majority of the industries (75%) has poor or bad management in respect to waste generation and disposal while only (25%) industries had good or effective management attitude towards wastes generation and disposal.

### 5.1 Summary of Findings

Based on the investigation carried out, the researchers discovered that:

1. Majority of the selected Industries in the study are had bad/poor management attitude towards wastes generation and disposal while only few Industries engaged or practice good/effective management attitudes, which is about 75% and 25% respectively in proportion.
2. There are differences in the composition of wastes generation types among the selected industries.

3. There are significant differences in the sizes/volume and rate of wastes generated and they was in correlation with the level of patronage among the selected industries.
4. There are similarly in the types of generated wastes based on categories among the selected industries.
5. There are less monitoring exercise by the authority charged with responsibility of proper waste generation and management within the study area due to little/no facilities to discharge their duties.

## 6.0 CONCLUSION AND RECOMMENDATIONS

### 6.1 Conclusion

As we all know that improper disposal and ill-management of generated wastes is very dangerous and harmful to human environment. Therefore, effective, efficient and proper disposal and

management of generated from hospitality industries should be a joint responsibilities of both the staff of the industries, the stakeholders( i.e. residents around and within the location of the industries) and institutions at all levels.

Conclusively, solid wastes generation and management in hospitality industries is not what must be toiled with because it could exposes human environment and human life to unwanted/harmful diseases. Therefore, there is a need for special attention by all concerned towards effective, efficient and proper disposal and management of generated solid wastes from hospitality industries in order to have a clean, clear and diseases free human environment and suitable atmospheric condition since many of these industries were located within residential areas.

## 6.2 Recommendations

Based on the findings from the study, the researchers recommend as follows that:

1. There should be an institutional/ legal framework for proper implementation of the national solid wastes generation and management policy.
2. There should be a proper and effective monitoring exercise/programme on the defaulters by the health official's personnel from both local and state government respectively.
3. There should be an organized regular educative programme for all hospitality industries across the state on the importance of proper wastes generation and management.
4. There should be an impetus/reward in terms of award to be given on yearly basis to industries with best wastes generation and management practice in order to encourage the practices

among the industries across the state and federation at large.

5. There should be an allocation of reasonable fund by government at all levels to the authority in charge of wastes generation management to purchase required equipment's/materials/instruments in order to enhance effectiveness and good performance in the discharge of their duties.

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