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WASTE MANAGEMENT PRACTICE IN OUAGADOUGOU, CASE OF HOTEL SECTOR: PROFITABILITY AND SUSTAINABILITY

SIKARATOU OUEDRAOGO

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DECLARATION

This research project is my original work and has not been submitted for examination to any other university for degree award.

Signature: Date:

Sikaratou OUEDRAOGO

RN°93203248

This project has been submitted with the approval of the University.

Signature: Date:



DEDICATION

I dedicate this research to my beloved parents Mr. and Mrs. OUEDRAOGO and my siblings for their moral and material support during the research especially during the difficult times.



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I am especially grateful to the Almighty God for his mercies and to my dear friend Mrs. Miriam OHENE-ASANTE whose support and guidance made it possible for me to complete this postgraduate course. I am indebted to my family and to Mr. SARR who have been a source of great encouragement throughout this project. I cannot forget to thank all the staff of Bravia Hotel especially the Deputy Administrator, Mr. KUMAR Rajesh for his patience and support.

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ABSTRACT

The growth of sustainable economy and its attendant environmental degradation drove hoteliers into adopting effective waste management practice. The purposes of this research are to evaluate the degree to which waste management practices are applied in the hotels in Ouagadougou and how these improve hotel profitability and sustainability. The study also aimed at proposing to hotels located in Ouagadougou and in Burkina Faso as a whole, a holistic framework that minimizes waste and increases profit.

Census survey was adopted. The unit of analysis was all the 3, 4 and 5 stars hotels in Ouagadougou. Three categories of questionnaires were submitted to managers of these hotels. Descriptive statistics were employed to analyze and interpret findings. The findings showed that 92% of the targeted hotels had poor waste management practices and only 79% considered waste management as a means to improve profit and sustain business.

This study was perceived as a work up caller. The proposed framework constitutes an important pathway to effective waste management for hoteliers. Thus, the researcher recommend that hotels executive managers should collaborate with government institutions to implement waste management policies to guide them. They should have partnership with local waste management and recycling agencies to sell out their waste material to reduce environmental degradation at the same create revenue.

Key Words: Waste management practices - Hotels- Profitability- Sustainability



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LIST OF ACRONYMS

CE : Circular Economy initiative

BUNEE : National Environmental Assessment Office

FAO : Food and Agriculture Organization

IHEI : International Hotels Environment Initiative

ISND : National Institute of Statistics and Demography

OBSTOUR : National Observatory of Tourism Board

UNWTO : World Tourism Organization

WMH : Waste Management Hierarchy

WMP : Waste Management Practices



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CHAPTER I/ INTRODUCTION

1.1. Background

Ouagadougou, the capital of Burkina Faso have been experiencing the growth of its hospitality industry with the presence of multiples hotels. The National Observatory of Tourism Board (2018), stated that there are about 78 hotels located in Ouagadougou. The hotel sector along with tourism industry are classified as third in foreign exchange earner in the country (Bambi. Z, 2020). In 2018 the hotel sector alone generated 51.92 billion of F CFA in 2018 (Bambio. Z, 2020). This clearly indicates the economic importance of the sector.

The growth of hotel sector improved the economy but happens to negatively impact the environment because of the waste generation. Hotels consume a substantial amount of energy, water and non-durable products (Zorpas, Voukkali, & Loizia, 2015). With its multiple services, the hotel sector turns to be a main source of waste generation (Amar Nath, 2014). IHEI (2002) estimated that a guest produces 1kg of waste per day and even much more on its check out day. Literatures highlighted that waste is anything whether solid or liquid arising from human activities which happens not to have any value to the person who possess it and is disposed as useless. As most waste can be harmful to human health and the environment, waste handling has become a pervasive sustainability problem requiring constant attention from hoteliers. In addition, increasing resource efficiency and waste minimization throughout the lifecycle of produced goods are, in fact, unexplored economic opportunities for a country's economic growth (Ghisellini et al., 2016). In Ouagadougou, little concern is given to hotel waste generation and to its impact on the business profitability and sustainability.

This thesis examines the implication of waste management practices of hotels in Ouagadougou and how these practices provide monetary and no-monetary benefit. The study aims at helping hotels to adopt effective waste management practices by proposing a holistic framework that minimizes waste at source; adds profit and improves competitive advantages.



1.2. Research aims and questions

This research aims at helping hotels in Burkina Faso to adopt effective waste management practices by proposing a framework that minimizes waste, reduces operational cost, adds profit and improves competitive advantages. In achieving the main objective, the research examined the hotels commitment's degree to waste management practices and the way these practices can positively affect the business profitability and sustainability.

The researcher through this study sought to answer the questions:

- To which extent are waste management practices applied in hotels in Ouagadougou?
- How important is waste management practices to hotel industry?
- What is the impact of waste management practices on the hotels profitability and sustainability?

1.3. Justification for the research

In the tourism and hospitality industry, hotel represents the largest sub-sector and it has undeniably the most impacts on the environment (Graci, 2010). When verbalizing about hotels, this takes into accounts accommodations, restaurants, bars, conferences, and other services within the property. Due to the very nature of their function, hotels consume substantial amounts of energy, water and non-durable products (Zorpas, Voukkali, & Loizia, 2015) and expel a large quantity of waste. Managing waste well and affordably to prevent environmental damage, human's health damage and to save cost is now one of the key challenges of the 21st century, and the key responsibilities of governments, and industries. Furthermore with the rising up of guest's preference for sustainable services (Kang et al., 2012), it becomes undeniable for hotels to efficiently and effectively manage waste in order to sustain their business.

Though hoteliers in Ouagadougou are environmental conscious, the lack of expertise to manage the large quantity of waste is barrier to effective waste treatment in hotels. Hence a



need for a study to propose a framework that can provide the necessary for effective waste management practice and support for hotel industry.

This study is paramount to tourism and hotel industry. Hotel operators will have an incisive look into waste management practices thus will enable them to acknowledge the benefits of these practices onto their business. In addition, the study will help hoteliers to cope with the environment dynamism pressure. Municipality authority is another player that will benefit from the study in its quest to institute regulations that promote sustainable waste management practice among industries. Finally, this study will add additional value to the existing knowledge in the field of academia on waste management and will help further other researches.

1.4. Definition of concepts

Waste Management

Waste management refers to the collection, transportation, processing, and disposal of waste material (Tsai, 2007). It is also defined as an overall approach to prevent waste and a combined range of collection and treatment methods to handle all waste materials in an environmentally effective, economically affordable and socially acceptable way (McDougal 2001). Waste management takes into account all processes and necessary resources for proper treatment of waste products and dumping facilities to compliance with health and environmental regulations.

Hotel Profitability:

The hotels' profitability is as important concern to hoteliers. Profitability is a relative measure of how profitable a business is. Being profitable is the ability of a company to use less of its resources to generate more revenues. Profitability in the field of hotel industry is related to overall organizational performance, market share growth, customer satisfaction (Richard et al 2009). It includes operational flexibility and cost reduction. Generally, a company with higher



profitability is more efficient. In the case of our study, profitability is the ability of a hotel to generate revenue and to minimize operational cost through the practice of waste management.

Sustainability

Sustainability in an organization is more than environmental management. It is also about economic and social development. Sustainability is an important focus and a necessity for many businesses (Insenga, 2019). Sustainability means that natural eco-system can continue to support life and to provide resources to meet the needs of the present and future generations. According to Clough et al (2006), sustainability is "*a process that helps to create a vibrant economy and a high quality of life, while respecting the need to sustain natural resources and protect the environment*". UNWTO (2004) considered that sustainable tourism and hospitality is based on three pillars: economic sustainability which requires the generation of prosperity and the cost effectiveness of all economic activities. The social pillar which means respecting human rights and equal opportunities for all society with a focus on alleviating poverty and environmental pillar, that refers to conserving and managing resources in a way to minimize pollution.

1.5.The hospitality industry in Burkina Faso

The Hospitality industry is in constant evolution since 2002 despite the security issue. In 2018, 728 hotels of all categories with full facilities for tourists and business travelers were registered in the country with a total number of rooms estimated at 129 000 (OBSTOUR 2018). Ouagadougou registered 78 hotels. The number of tourist arrivals has also grown from 512 493 in 2017 to 540 390 in 2018 with an increase rate of 5.4% (OBSTOUR, 2018). Hotel industry in Burkina Faso focused on business travelers as they represent 63% of tourists traveling into the country. Leisure travelers represent only 15% of the total tourists. According to National statistics and demography institute's report (2017), the hotels' occupancy rate varies between 39.1% and 69%.



With its additional services such as restaurant, bars, conference halls, recreational and relaxation services provided to ensure full satisfaction to clients, the hotel sector generated on its own a revenue of 51.92 billion of F CFA in 2018 (Bambio. Z, 2020).

1.6.Methodology outline

The study was subjected to census survey design. Both descriptive statistic and correlation analysis were employed to analyze responses from participants. The population unit was all the 15 hotels of 3, 4 and 5 stars present in Ouagadougou. Primary data were collected from middle and executive managers to whom questionnaires were administered. Secondary data from literatures were also used for better understanding of the topic.

1.7.Thesis outline

The study conducted in Ouagadougou, Burkina Faso, was composed of five chapters.

- Chapter one introduces the background of research. Research questions and aims; the study justification; the methodology and thesis outlines are included in this chapter. Furthermore, the chapter provides definition of the concepts related to the study and briefly highlights information about tourism and hotel industry in Burkina Faso.
- Chapter two is about the literature review. This chapter presents a comprehensive literature review on concepts and theories related to waste management practice. The empirical review will be further discussed in this chapter
- Chapter three is related to the methodology used for this research. The research design, the instruments, the methods of data collections and analysis are all explained in this chapter.
- Chapter four gives details information about findings of the research. Each finding is discussed. The chapter also provides a model for waste management practices in a hotel.



Chapter five draws the conclusion of the research. The chapter provides summary analysis from findings. It also states the recommendations, the limitation and the opportunity for further studies. .



CHAPTER II/ LITERATURE REVIEW

2.1 Introduction

This chapter concentrates on the reviews of various studies conducted on hotels waste and its management practices. Theories related to the study are explored to give an understanding on the importance of effective waste management practices. Correlation between waste management and hotel profitability and sustainability are review based on certain literatures.

2.2 Theoretical foundation of the study

This study is based into three theories that are resource based view, stakeholders' theory and Circular Economy Initiative

2.2.1. Resource Based view

This theory stated that firms can earn extra returns if they have superior resources and the resources are protected by some form of isolating mechanism which prevent their diffusion throughout the industry (Hibbets, et. al, 2003). As per the resource based view, firm that have “strategic resources”, are ahead over those that do not in term of opportunity. With strategic resources, firms improve their efficiency while removing the threats of competitors. Resource Based View allows firm to put in place strategic management plans to identify, develop and deploy key resources to maximize returns (Razzaque & Sheng, 1998). It appears that even though the hotel sector is highly competitive, hotel that put in place effective waste management practice turn to increase their profitability.

2.2.2 Stakeholders' theory

Stakeholders' theory stipulates that firms' aim is to manage the interests, the needs and point of views of these stakeholders. Furthermore it states that it is a must for organizations to consider stakeholders' rights and to manage the organization to benefit all stakeholders. This



is due to the fact that without support of stakeholders, a firm cannot exist. Freeman, et al. (2001) mentioned that a company's real success lies in satisfying all its stakeholders.

Waste management is seen as part of the overall social responsibility of any organization and is the best approached by stakeholder theory. In his study David Muta (2015) argue that

"stakeholders monitor and enforce the regulatory, economic and social license requirements to seek leverage by exploiting a variety of license terms". (David Muta kimeu, 2015; p14)

This means that waste management practice is affected by, social and economic regulatory.

The relevance of this theory in the study is that hotels have to put more additional attention on the dimension of effective waste management to meet the stakeholders' interest. Hotels have to always communicate with all stakeholders on waste management strategies put in place to ensure its societal responsibility.

2.2.3 Circular Economy initiative

The CE has been receiving increasing attention from academics (Ghisellini et al., 2016), governments and companies as an alternative to the prevailing model of economic development: the so-called "linear economy" (Andersen, 2007), and otherwise known as the "take, make and dispose" model (Ness, 2008). C.E holds that firms have to use the 3R (reduce, reuse and recycle) to seek benefit in terms of competitive advantage and increase of profit. The principle of reduce implies that firm has to minimize their input energy, raw material and waste by implementing better technologies, simplifying packaging, and using more power-efficient appliances (Su et al., 2013). The reuse principle states that any waste components that are not disposed of can be reused for the same purpose for which they were manufactured. With the reuse, fewer resources, less energy, and less labor are utilized than that required to produce new products from virgin materials (Castellani et al., 2015). The



recycling principle refers to any recovery operation by which waste materials are reprocessed and turned into new products, materials or substances.

The Circular Economy is of relevance to the study because of the institutional pressure and the current situation in hotel sector which is characterized by the constant increase of guest preference for green business. As result it is now a must for hoteliers to operate an effective waste management practice to sustain their business.

2.3 Hotels wastes generation

Waste generation is considered to be the most noticeable effect which the hotels have on the environment. This is due to the fact that hotels, use large quantities of consumer goods as part of their operations (Bohdanowicz, 2005). Momoh and Oladebeye, (2010) in his study on “assessment of awareness, attitude and willingness of people to participate in household solid waste recycling program in Ado-Ekiti, Nigeria” mentioned that waste generation includes activities in which materials are identified as no longer being of value and are either thrown away or gathered together for disposal. Waste from hotels activities is generally composed of dry and liquid (organic and biodegradable) waste. According to Wagh (2008) the primary waste in a hotel is wet waste. Each hotel’s room generates an estimated 1 kg of solid waste per day (IHEI, 2002) and more than one million of ton of waste is produced annually.

2.3.1. Hotel source of waste

Various studies have highlighted five main sources of waste generation in hotels.

- Offices (Accounts, Human Resources, Public Relations, Sales & Marketing, Front Office, supporting offices of other departments);
- Purchasing and stores;
- Technical department (maintenance, engineering)



- Housekeeping and Laundry (and dry cleaning); and
- Food and beverage (including outlets, kitchens and stewarding).

These areas of operations produce different kinds of waste, ranging from paper to environmentally hazardous chemical waste.

2.3.2. Characteristics and quantification of hotels wastes

In waste management strategies, an appreciation of characteristics and quantities of the waste is crucial in developing efficient management methods. Although hotels generate different quantity of waste, academics or institutional researches made in Burkina Faso remain nonexistent as concerning the waste composition and volume. This is particularly noticed in the developing countries. In fact hotels in most developing countries do not monitor their waste.

Past studies focused on the quantification and characterization of waste generated by hotels, have shown two types of wastes: solid and liquid (organic and biodegradable). Various researches stated some typical waste generated by the hotel Industry. For instance food waste constitutes the primary waste source (Wagh, 2008). It accounts for more than 50% of all the hotels' waste (Curry, 2012). Food waste is one of the most important waste management problem faced by hotels worldwide. There is 1.7 billion tons of food wastage in the worldwide (FAO, 2014). Other types of waste are paper, plastics, aluminum, glass, and water, cardboard, steel. Table N°2.1 below represents components and sources of hotel solid non-hazardous waste as per Zein et al., (2018).



Non- Hazardous waste	Components	Sources
Household wastes	Food/ kitchen waste, used or dirty paper and wrapping, plastic wrapping or bags composted wrappers	Hotel's different departments
Cardboard	Packing	Hotel's purchasing and other department
Paper	Printing documents, factsheet, brochures, menus card, newpaper, magasine, notepad,	Administration, reception, guest rooms, restaurant
Plastic	Bags, bottle (that do not contain hazardous material), household goods, individual portion wrappers for various products	Kitchen, restaurant, bars, guest room, laundry, Administration
Metal	Jar lids, tin can, soda cans, food containers, aluminum packing, tomato puree tubes	Kitchen, restaurants, bars, guest room,
Glass	bottles, jars, flasks	Kitchen, restaurant, bars, guest room,
Cloth	Table cloth, bed-linen, napkins, clothes, rags	Kitchen, restaurant, bars, bathrooms, guests rooms
Wood	wooden packing pallets	Purchasing department
Organic waste	fruit and vegetable peelings, flowers and plants, branches, leaves, grass	Kitchen, restaurant, bars, guest rooms, gardens

Table n° 2.1: Types of non-hazardous waste in the hotel industry (based on the work of Zein et al., 2008)

It must be necessary to remember that these are not exhaustive lists of the components.

Hotels produce also other waste such as construction, electronic and furniture waste. And even though the composition of waste is almost the same across the hotels industry, its quantity varies from different types and size of the property. The table N°2.2 shows percentage of hotels waste component mentioned in other past studies in different countries.



Reference	Study location	study period	waste quantities/ per day	Data Source
Amar NATH, 2014	New Dehli, Noida, Greater Noida, Ghaziabad & Gurgaon	2013	FOOD/ WHEET 61.2% WASTE; 0.8% PLASTIC PET BOTTLE; 1,5% OTHER PLASTIC ; 0.5% TETRA PAK (Laminated pear); 4,47% ALUMINIUM; 14,8% GLASS; 6,1% NEWPAPER; 0,7% MIXED OFFICE PAPER; 13,7% CARBOARD; 0,2% TRASH (Laminated plastic)	Study of eight hotels
Nripendra Singh et al, 2014	Pennsylvania	2013	10% Plastic bottle, 2% Other plastic, 3% Teracycle, 5% Aluminum, 6% Glass, 7% Newspaper, 6% Mixed office, 2% Cardboard, 47% Compost; 13% Trash in hotels with F&B services and 17% Plastic bottle, 6% Other plastic, 5% Teracycle, 12% Aluminum, 14% Glass, 3% Newspaper, 5% Mixed office; 6% Cardboard, 19% Compost, 12% Trash in hotel without F&B services	Study of 03 hotels with F&B services and 2 hotel without F&B services
Do Nam Trung, S.Kumar; 2003	Vietnam	Not dated	41% Food waste, 21% plastics Packing, Paper, 5% Aluminum cans, metal, glass; 4% Garden waste, 27% Others	Solid waste in stars hotels (more than 30 hotels)
Parfitt et al, 2013	UK	2012	37% Food waste, 18% Paper, 7% Cardboard, 15% Plastics, 10% Glass and 13% others	Study of 35 hotels
Wrap K, 2012	UK	2009-2010	41% food waste, 13% Paper, 9% cardboard, 10% plastics, 14% glass and 13% Others	Study of 138 hospitality industry businesses

Table n°2.2 : : Results from Various studies on quantifiers and composition of hospitality waste; source : International journal of scientific & research publication



2.4 Waste Management Practice

The waste management practice is mainly done through the use of waste management Hierarchy and auditing. These two important tools enable organizations to reduce their impact on environment.

2.4.1. The Waste Management Hierarchy Model

The Waste management hierarchy provides potential options for managing waste, through prevention, minimization, reuse, recycling, recovery and disposal (Waste online, 2006). WMH states an order of preference for the best friendly environmental options (UK Government Strategy Unit, 2002). Presented in an inverted triangle form, the purpose of waste hierarchy is to prioritize waste prevention. The higher up the triangle, the more sustainable it is the waste management strategy (Nath, 2014). Failing to prevent waste generation, the best range of option to consider is re-use, recycling of waste before transferring it to landfill. Figure N°2.1 is representing the WMH.



Figure 1. : Waste Management Hierarchy: source: letsrecycle.com

- Waste prevention: means eliminating the amount of waste or its toxicity. It includes the reducing waste during a product life cycle through greater efficiency in the use of resources. It is the best option of managing waste.



- Reuse: is giving “a second life” to material that was supposed to go into waste stream. It is the process of putting waste materials back into use instead of disposing them off directly.
- Recycling waste: it involves transforming waste materials into new products.
- Recovery: is using the value part of waste material and transforming it into energy.
- Disposal: it is the last step after all options have been explored. It is the least preferred method because of the negative impact on environment and finance.

2.4.2. Waste Audit

Hotels waste is directly sent to the landfill sites without proper treatment and segregation (McCoy et al, 2002). The first step to efficiently managing waste is conducting a waste audit. Waste auditing is identifying the process of productivity from waste management practices in hotels (Erich Lawson, March 2018). Identify where the hotel is creating waste and quantifying the materials discarded, help hotels managers to have a daily statistic on waste and to minimize the volume of waste dumped in the landfill.

The waste audit sheet allows hoteliers to classify waste into recyclable, compostable and inert at the same time reducing cost of disposal. The results of the audits are used to actually calculate the cost of different waste treatment options. Appendix 1 is a model of audit sheet and Appendix II contains certain types of waste generated (inert, compostable or recyclable or reuse) in the hotel industry.

2.4.3. Waste management from Hotels

It is a fact that hotels impact adversely on the environment through the generation of solid and liquid waste, emission of dangerous chemicals, and pollution of the atmosphere, (Chan & Lam, 2002). Many hotels especially in developing countries have little consideration in recycling waste as they believe the cost involved is higher than the benefit. Therefore waste across hotel supply chains is growing (Al-Aomar and Hussain 2018), causing disastrous



environmental consequences such water, land and air pollutions. Mensah, (2020) argued in his study “Waste management practices of small hotels in Accra: An application of the waste management hierarchy model” that disposal at landfill sites which is the least preferred option under the WMH model, is rather the most preferred option for “small” hotels. In a study made on solid waste management in Tunisia hotels , (Chaabane, Nassour, and Nelles, 2018) found that 83% of hotels sent directly their mixed waste to the landfill, and only 17% of hotels had developed small recycling and composting initiatives.

In another study (2009), the authors stated that “*hotels managers are aware of the importance of environmental and social performance goals, but are under pressure to achieve financial results and are thus fully dedicated to economic goals that they can't afford investing resources and time in waste management*”.

2.5 Profitability and sustainability from waste management practices

Hotel waste management model is always classified into two aspects which are profitability and sustainability (Nath, 2014)

2.5.1. Profitability from waste management practice

Waste has a market value which can be an important parameters to be considered in the application of effective waste management practices for hotels. Many researches outside Burkina Faso have proved that waste is a revenue earning source for hotels. However only waste that has comparably high market value such as electronic items, used oil, can tin and plastic bottles, is separated and arranged for collection by waste recyclers. Waste segregation is extremely important because waste collectors and recyclers are usually ready to pay more money for cleaner waste products.

Waste management through the application of the 3R (reduction, reuse and recycle) increases the overall profit and minimizes operational cost. Recycling items and composting



waste material can generate amount of revenue (Nath 2014). Recycling is very beneficial in terms of energy savings. In Mauritius some hotels are recycling materials such as the plates made of glasses, chairs, and kitchen waste for composting and for gardening. Thus, the use of recycled materials reduces the need to import raw materials, meaning less money is spent on foreign currency (Chaabane, Nassour, and Nelles, 2018). Earlier, Omidiani & HashemiHezaveh (2016) stated that waste items work as profit enhancer and profitability from waste can be classified into: saving from wet or organic waste and saving from salvage value of recyclable waste. According to Nath (2014), composting of wet or organic waste creates more revenue because of the high fraction of overall waste (60- 70%). It is well proved from auditing that hotel can generate $\frac{3}{4}$ of compostable waste. However this depends of the type of technique used by the hoteliers to process the waste.

2.5.2. Sustainability from waste management practice

Sustainability creates and maintains the conditions for humans and nature survival in a productive manner (Amar NATH, 2014). Any company strategy that needs to be sustainable has to take into account the social, economic and environmental aspects.

Today with the growth of competition regarding sustainability in hotel sector, waste management has become the most important tool to demonstrate commitment to environmental protection and social development. These days many international brand hotels are reporting their sustainability activities. As per Nath, (2014) study, some hotels chains are providing reports by using carbon, energy, water, and waste as measurements.

Hotels commitment to environmental protection is done through waste minimization, reuse and recycle of solid waste. Recycling helps hotels to reduce pressure on natural resources. Treatment of compostable waste is the best alternative for hotels managers to prevent soil degradation and GHG emission at the same time sustaining clean and green place for the guests. With the 3R and the composting of waste, hotels can fulfil their environmental



responsibility. They can achieve the economic development of the business strategy because sustainable hotels attract more clients.

On the social aspect, through waste management, hotels gain a good image which is highly important in this industry. Certain waste material from linen such as discarded bed sheets and towels or even some old plates and cutlery are sent to orphanages or distributed among employees. Regular waste collection and disposal create employment for people from economically backward (David Mutua Kimeu, 2015).

2.6 Empirical review

Managing waste can be challenging for organizations, industries and commercial service. Most empirical researchers focused on waste management planning concepts, frameworks, strategies, and components that are current and emerging in the field of hotel sector. They found a wrong link between environmental protection and hotels management operations and demonstrated the need for hotels to promote “green hotels”.

Nath (2014) investigated the relationship between profitability and sustainability from waste management. His findings indicated that green hotels operations increase profitability and enhance sustainability. Findings also showed that waste management provided marketing advantage and improved public image. The sample population unit and the instruments used in this study were acceptable which allowed him to develop a model for hotel to generate profit from waste.

In the study of Gary Davidson (2011), on “waste management practice”, it is demonstrated that integrated waste resource management planning helps organizations to put in place comprehensive strategy that can remain flexible in light of changing economic, social, material (products and packaging) and environmental conditions. The study also



indicates that is crucial for organization to have a waste management plan that examines into details waste components.

Aarti Singh and Sushil (2017) in their study however spotlighted waste management factors as being important in forming policies, rules and planning strategies for enhanced waste management in the organization. The conceptual waste management framework developed by Singh & Sushil figured out the driving and dependent factors of waste management. It enables managers to plan best strategy and policy for managing waste.

Singh and Sushil model, the integrated waste resource management strategy and the framework developed by Nath (2014) failed to take into account attitude of hoteliers towards the implementation of “green practice”. Their models even though they indicate benefits to hotels, do not include any motivational, training or pressure aspects that can influence hoteliers’ behavior with respect to waste management.



CHAPTER III / METHODS

3.1. Introduction

This chapter describes the methods that were used to collect pertinent data in answering the research questions. It captures the research design, the target population, method of data collection, and data analysis methods utilized in the study.

3.2. Study Area and Design

The study was carried out in hotels located in the capital city of Burkina Faso. Ouagadougou is a bustling political center undergoing rapid urbanization. It is the most urbanized city in Burkina Faso, with 2 532 311 inhabitants (ISND report, 2015). Ouagadougou is the administrative, economic and cultural center with the main economic activities based on services and retails. There has been a rapid increase in the number of hotels in the city due to an increase in tourist arrivals. This is the main reason of selecting this area for the study. The Appendix 4 is a representation of Ouagadougou mapping.

A census survey design was used to allow the researcher gather substantial information, summarize, present and interpret for the purpose of clarification. In this study, the researcher is interested on the state of affairs already existing in the field. This census survey enabled the researcher to determine and better understand the effect of waste management practices on hotels' profitability and sustainability. Justification of selecting this research design is due to the small number of the unit population. This survey design provide a sizeable data.

3.3. Population of the study

Regarding the small number of the target population, all the three to five stars hotels in Ouagadougou were taking into account in the study to enable the researcher to obtain sizeable and substantial data. Middle and executive managers were the respondents in this study since



as they are in decision making and daily organization operations. The justification of the selection of these hotels was the fact that they were assumed to have the means to implement a proper waste management model and policies. In addition, these hotels register the highest number of bookings per year. Moreover, these hotels have many other services like conferences and banqueting halls, bars and restaurants, business centers. Therefore, they produce much more waste. Table N°3.1 represents the target unit. List of target hotels is presented in Appendix3.

Category (stars)	Number of target hotels	Number of respondents
5 stars	01	01
4 stars	05	05
3 stars	09	09
Total	15	15

Table N° 3.1: Population of study

3.4.Data collection

Primary data were used in the study. Primary data were collected through questionnaires (Appendix 5). The questionnaire was administered to either middle or top managers of the targeted hotels through a drop and pick later method. Questionnaire was categorized into three parts; Part A covered the demographic and respondent's profile; Part B was based on an evaluation of the waste management practices in each hotel and Part C determined the impact of waste management on the profitability and sustainability of hotels in Ouagadougou. Questionnaire ensured better compatibility in response (Field, 2005)

3.5.Data Analysis

Descriptive statistics, which usually comprised of frequencies and percentage, were employed by the researcher to analyze the data. (Mugenda and Mugenda, 2003 in Christina. G.N, 2016) argued that descriptive statistics provide meaningful description and



measurements for the research. The data from questionnaire was edited, analyzed, further summarized and discussed.

3.6. Research ethics:

For the purpose of this study, the researcher sought permission from targeted hotels management before submitting questionnaire. The researcher explained to managers the necessity and importance of the study and assured that all given information will be kept confidential. Furthermore, the research assure respondents about anonym on their profile. Participation in the study was voluntary, and withdraw was allowed at any time. Upon request, a summary of findings would be sent to participants.



CHAPTER IV/ FINDINGS AND INTERPRETATION

4.1. Introduction

This chapter presents the findings of the study and their interpretations. The response rate, characteristic of respondents and all findings on the research are included in this chapter. Data were collected through the exclusive use of the questionnaires and the findings were presented in form of tables and charts. The study's purposes were to examine the extent to which hotels are committed to waste management practices and their importance for the business. The study also focus on proposing to hotels a holistic model for effective waste management in order to create sustainable business along with generating profitability from waste.

4.2. Response rate

Questionnaires were submitted to 15 targeted hotel in Ouagadougou. 13 questionnaires were totally returned duly filled and fit for analysis. This represents 86.7% of response rate which was slightly above 80% as per (Fincham, 2008 in Christina. G.N, 2016) recommendation.

4.3. Socio-demographic characteristics of respondents

The socio-demographic characteristics of respondents was assessed based on the current study which is 13 out of the 15 respondents. The study allowed the researcher know more about the respondents' profile.

4.3.1. Managers profile

Gender, age, level of education and number of years working in the hotel industry are presented in the table N° 4.1. The findings on the gender and age of the respondents showed that 76.9% were male and 61.5% were aged between 41 to 50 years. These results demonstrated that there is disparity among hotels managers and that young people and



females are minority in the middle and top management line. As for the level of education, 69.2% of the respondents have acquired a professional diploma which is the equivalent post graduate level. It means that majority of middle and executive managers were highly educated. The results from question on the years of working experiences, showed that majority (61.5%) of the respondents had adequate and strong experience of 20 years and above in the field of hospitality that allow them answer the questionnaire. Only few (7.7%) had a working experience ranging from 5 to 10 years.

Characteristic	Category	Frenquency	Percentage %
Gender	Female	3	23,07692308
	Male	10	76,92307692
Total		13	100
Ages (year	< 30	0	
	(30- 40)	2	15,38461538
	(41 - 50)	8	61,53846154
	> 50	3	23,07692308
Total		13	100
Level of education	College	0	0
	under gruate	9	69,23076923
	Post graduate	4	30,76923077
Total		13	100
Working experience	< 5	0	0
	(5 - 10)	1	7,692307692
	(11 -20)	4	30,76923077
	> 20	8	61,53846154
Total		13	100

Table 4.1 : Respondents profile

4.3.2. Hotels profiles

The hotels characteristics were examined. The examination involved the rating, the number of years of operations, the location, the numbers of rooms, and the type of clients, the number of ancillary services and the occupancy rate.

The study on hotels profiles showed that Majority of respondent's hotels 61.53% have been in operation for more than 15 years. 15.4% hotels have only 5 years of operation and



23% are less than 10 years. This indicated that hotel activities have been affecting the environment for more than 15 years, through the generation of waste. The table N°4.2 bellowed also showed that most of the targeted hotels had less than 100 guest rooms (61.5%) and only 38.5% had more than 100 rooms. With Majority (76.9%) reporting business tourists as the main target markets. Only 23.1% hotels focus on individual leisure and medical tourists. Other finding on the hotels profile is related to the occupancy rate. In fact, 69.2% of the hotels had an annual average occupancy rate of $\leq 75.23\%$. 23.07% of the hotels had $\leq 50\%$ of their rooms occupied each year and a small group (7.7%) registered a yearly average T.O of ≤ 100 . From these results it is clear that hotels contribute a lot into waste production in the city.

Characteristic	Category	Frequency	Percentage
Year of operation	≤ 5	2	15,38461538
	≤ 10	3	23,07692308
	> 15	8	61,53846154
Total		13	100
Rating (stars)	3	8	61,53846154
	4	4	30,76923077
	5	1	7,692307692
Total		13	100
Size of the hotel (rooms)	≤ 50	2	15,38461538
	≤ 80	6	46,15384615
	≥ 100	5	38,46153846
Total		13	100
Major clients	tourist	3	23,07692308
	Business	10	76,92307692
Total		13	100
average occupancy rate / year	≤ 50	3	23,07692308
	≤ 75	9	69,23076923
	≤ 100	1	7,692307692
Total		13	100

Table 4.2: *hotels profile*

4.4.Waste management Practice in hotel sector

The study sought to find out the extent to which hotels are committed to effective waste management practice. The participants from 3, 4 and 5 stars hotels were requested to auto-evaluate the practices adopted in their hotels to handle daily waste. Twenty closed-questions were submitted and respondents had to respond by either “Yes” or “No”. Reponses were then quantified and presented in the following chart (Figure N°4.1).

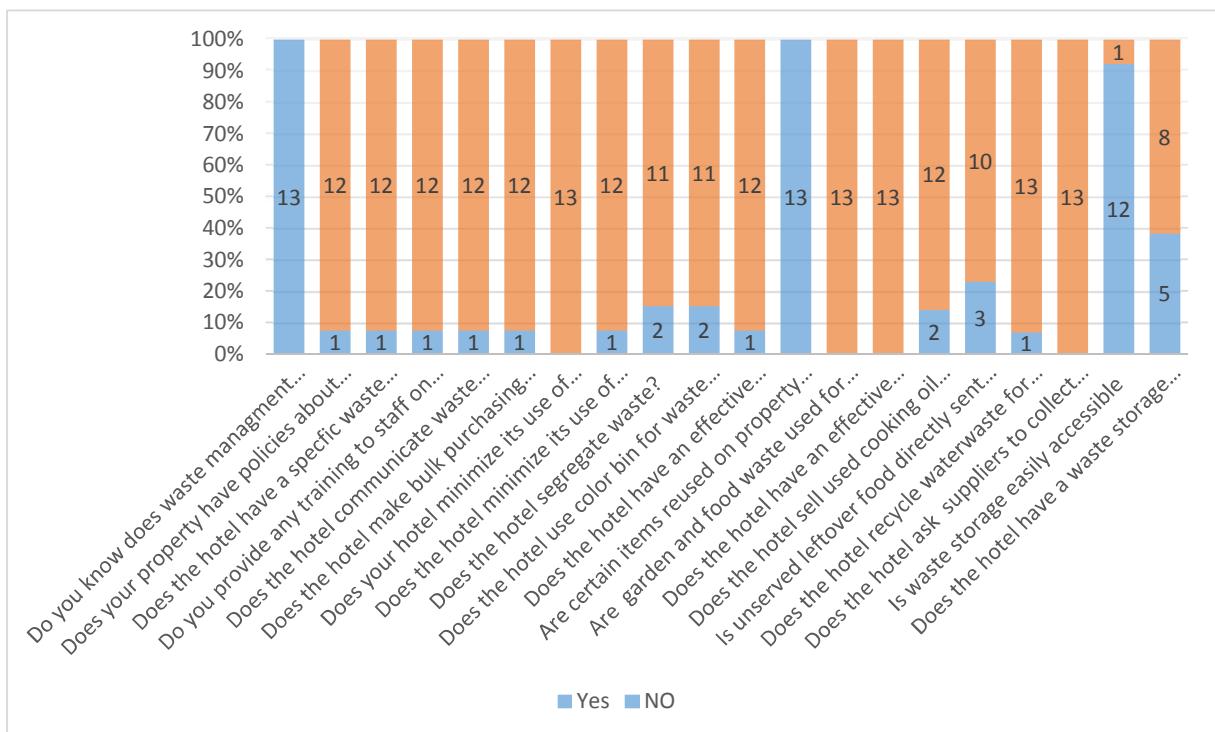


Figure 2 : Evaluation WMP in hotels. Source: Research data

From the findings, all the respondents had knowledge about waste management. But controversially 8% had put in place a waste management policies within their property. The remaining 92% lacked of policies and did not provide any training to their staff on WMP. Results indicated that waste minimization is totally neglected by almost all the hotels. Only one hotel (8%) had tried to reduce its use of disposable items such as disposable napkins, aprons, and single serving food package (butter, sugar and jam). On the question related to waste separation, it came out that 15% of the targeted hotels practiced waste segregation and used colored bins to properly separate kitchen waste form other services waste. The 85% of



the hotels sent directly their solid waste to central waste storage facility without segregation, which was later transferred to landfill by waste collectors. On the other hand all the 13 hotels (100%) indicated that some items were reused on the property or given to staff or donated to orphanages if possible. None of the respondents indicated that their properties make compost from waste (garden and kitchen) and do not ask suppliers to collect back the empty containers. All the 100% mentioned they had a poor program for collecting and recycling used cooking oil. However, two hotels had sold some of the cooking oil, furniture and equipment waste to local recyclers. Participants were also asked to indicate whether their unserved leftover food was directly sent to landfill. On this question 77% of the hotels mentioned that unserved leftover food is reused as staff meal if well-kept and 23% respondents sent theirs directly to landfill. Even though the findings showed that the waste storage facilities are easily accessible in all the hotels, it further stated that 38% had well designed facilities with required norms. 62% of the hotels did not.

4.5.Importance waste management to hotels

The respondents in the study were asked to give their appreciations on the importance of waste management for their hotels activities. The figure N°4.2 was a summary of all the questions submitted to participants on the influence WMP. These questions were further regrouped into three mains aspects for better understanding.

Regarding the importance of waste management in a hotel sector, it was shown on the stick-shaped graph that most of the respondents agreed on the concern. In terms of cost minimization, they estimated that waste management required a certain investments. This explained the high level of uncertainty on maintenance cost reduction in the graph. There were even two respondents that completely disagree with waste management having positive impact on maintenance cost. On the other hand all the 13 hotels strongly agreed that waste

management helps in protecting the property from insects and rodents infection and contributes to the improvement of public or business image.



Figure 3 . : *Importance of waste management practices on hotels activities.*

4.5.1. Impact of WMP on operational cost

Participants were asked to indicate whether waste management practices could lead to the reduction of their operation cost. 62% of the respondents agreed that a waste management practice could have a positive impact on their operational cost. 33% of the studied hotels remained septic about the question.

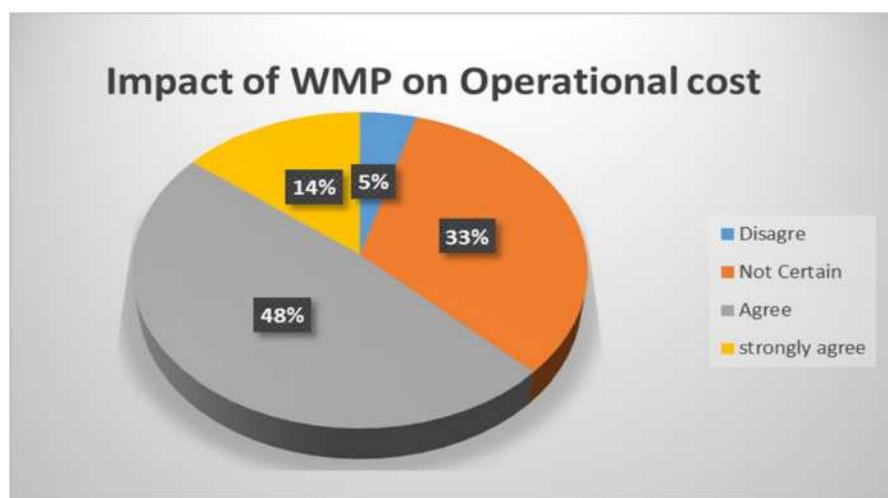


Figure 4. : *Impact of waste management practices on operational cost*

4.5.2. *Impact of waste management practices to the performance of the hotels*

72% of the respondents acknowledged that through waste management practices hotels could receive more referral from guests and that sales (reservation) could increase. They also agreed that WMP ensure repeat clients and increase the level of guest satisfaction. Furthermore in addition to 9% of the respondent strongly saw WMP as a source of new incomes.

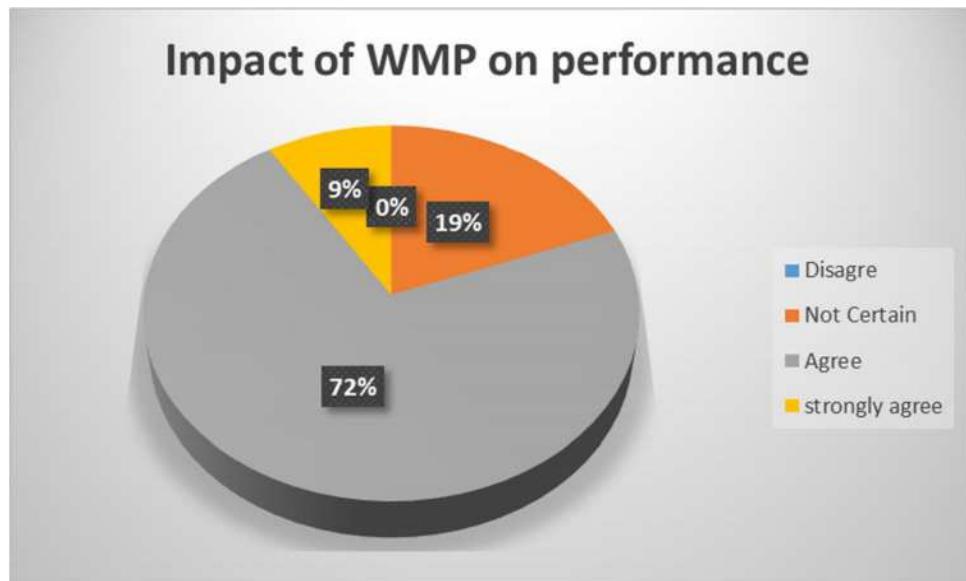


Figure 5 : Impact of waste management Practice hotel performance

4.5.3. *Impact of waste management practices on hotels environment and social responsibility development.*

On this question, 51% of the respondents were strongly agreed with the fact that hotels sustainability aspect could be improved through the practice of waste management. They are followed by 44% which strongly think waste management practices could provide all the means to better sustain the environmental and social responsibility of a hotel. The remaining 6% were not certain that waste management could have any positive impact on improving hotels sustainability.



Figure 6 : Impact of waste management on environmental and social responsibility

4.6.Findings discussion

The evaluation of waste management practices in the 3, 4, and 5 stars hotels allowed the researcher to get response of her first question related to the level of hotels commitment to WMP. The study demonstrated that most respondents (92%) did not really respect the effective process and standards concerning waste management except an every few that struggle to follow the rules. In additional 62% respondent did have suitable storage facilities for waste. Which means that their properties can be easily be infested by insect and rodent. In the rainy season, the storage facilities can smell badly. Meanwhile all of hotels' respondents admitted to have knowledge on the waste management and recognized the merits of its practices in the hotel business. With regard to the above statement, it can be affirm that the hotels' commitment towards WMP is low. In his study Mensah (2020) also agreed that there is a poor commitment from "small hotels" in practicing waste management. Therefore the researcher came out with some interrogations. What could be the reason behind this lack of commitment to waste management practices in the Ouagadougou's hotels? Could the lack of expertise, or the required investment as stated by Mensah (2020) be the source of this poor waste management practices?



The results from the questions related to the importance of waste management practices on hotels profitability and sustainability, allowed the researcher to state that there is a positive impact of WMP on hotels business as it was shown in David. M. K (2015) study. In total 81% of respondents recognized that hotels can improve their performance and save money through the WMP.

4.7. Holistic framework for waste management practices in hotels

On the basis of literature reviews, WMH model, and finding from the study, the researcher proposed a framework for hotel industry with focus on monetary and no-monetary benefit. This model provides a laid-out mechanism that can be used by hoteliers to elaborate their own waste management strategy according to their waste characteristics. It gives them the opportunity to cut down on operation cost, to save money, to create new revenue, to protect environment and to develop a good business image. Many options are provided by the framework to meet the objective of the study:

- The framework advises hotel management to take into account legal regulation about waste management in Burkina Faso while elaborating their strategy. In this case management can fulfill its social responsibility.
- The framework advises hoteliers to practice wise purchasing by prioritizing bulk purchases to cut down on packaging waste. It is proved that bulk purchasing allows management to negotiate for better price and minimize land pollution.
- The framework advises hoteliers to train their staff to better audit and segregate waste for better value. Training motivates and improves employees' self-confidence as well as the credibility of the hotels.
- The framework advises hoteliers to reuse waste material or to distribute unwanted items. This contributes to improve their marketing image.



- The framework advises hoteliers to partner with local recycling and composting agencies in Burkina Faso to minimize the quantity of waste sent to landfill. Through this partnership, hotels managers can either provide waste material for free of charge and in return benefit of lower price for the goods produced such clean soap, fertilizers, inks. In the other hand, hotels can sell recycling and compositing material to generate revenue.
- Framework advises hoteliers to communicate with stakeholders to gain their commitment on effective waste management practice and to place themselves as leader in “green hotel “market in Burkina Faso.

However more works need to be done on this framework, before being validated by experts. The development of this framework did not consider all factors such cost benefit, waste auditing. At this level the framework is a sketch meant to stimulate hotelier’s behavior intention in relation to effective waste management practice.

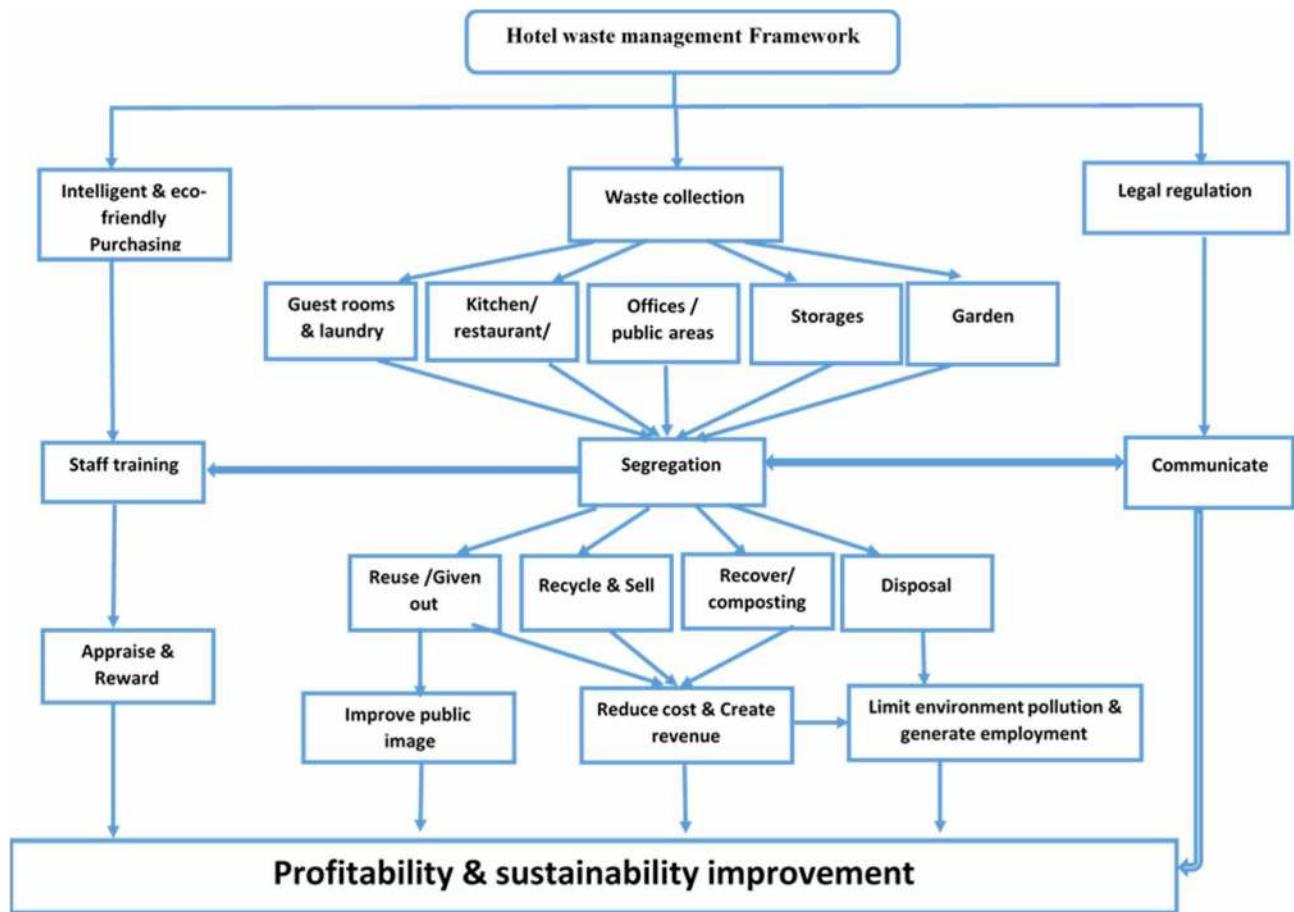


Figure 7 : Framework for hotel waste management implementation made by the author.



CHAPTER V/ CONCLUSION

5.1. Introduction

This chapter provides the summary of findings and the conclusion of the study. Base on the research findings, practical implications and recommendations are stated. The limitations of the study and the opportunities for further studies are also mentioned in this chapter.

5.2. Summary of findings

The study mainly aimed at proposing a model of best waste management practices to help hoteliers improve their profitability as well as developing theirs environmental and social responsibilities. It also looked at the extent to which proper waste management is practiced by hotels in Ouagadougou. A census survey design was adopted and the target unit was all the 15 hotels of 3, 4 and 5 stars located in Ouagadougou. Managers were the respondents in this study. The response rate was 86.7% given out 15 participants. Questionnaires were used to collect data and was submitted to either one middle or top manager of each hotel. Descriptive statistics were utilized to analyze data and to organize the findings.

The study found that 62% of the hotels have been in operation for more than 15 year and 23% had about 10 years of operation. Also it came out that business tourists were the target market of 77% of the hotels.

The findings of the study revealed that majority (92%) of the target unit had a poor waste management practices. Waste minimization was neglected by almost all the hotels. 8% of the respondents indicated a slight minimization of waste disposal. The only waste recycled on the property is water waste and it was done by one hotel. 15% of the respondents mentioned that used cooking oil and waste from furniture and equipment were sometime sold to local waste dealer for recycling. The most used waste management practices remained



waste collection, and disposal to landfill. Even at that level, many of the target hotels (62%) do not have the adequate storage facilities.

The outcome of the research further indicated that majority of the respondents (62%) adhered with the idea that WMP led to total operation cost reduction while 33% are little bit septic. 5% totally disagreed and see WMP as rather an increase in expenditure. 81% of the respondents agreed that effective waste management practices could improve the whole performance of the hotel which includes increase demand for reservation, referral, guest satisfaction. 94% of the respondents approved that waste management practices could contribute to sustain hotels environmental and social responsibility and improve non-monetary benefit. In general. In General, 79% of the respondents recognized the positive effect of waste management on their business profitability and sustainability.

5.3. Conclusion

The study concludes that though, there are number of studies that have been done on waste management in almost all other industries, management of hotel waste had largely been remained untouched in Burkina Faso. This scanty knowledge available had hamstrung the prospects for proper waste management applications.

The research also concludes that the target hotels were less commitment to waste management practices but they recognized the merit of these practices for hotels business. It was observed from the results that minimization of waste was not part of the business strategy of the hotels in Ouagadougou. The study, concludes that Majority of the hotels did not practice waste recycling or composting thus, effective waste management practices are nonexistent. Furthermore, the research showed that lack of knowledge cannot be considered as the reason for not practicing a good management of waste.

The finding from the analysis revealed that profitability and sustainability of hotels in Ouagadougou were positively impacted by waste management practices. The researcher then



agreed with the observation made by Nath (2014) that waste management practices can influence the growth of hotels in term of profit, performance and development of social and environmental responsibility.

The holistic framework elaborated by the research is an excellent tool for better waste management implementation and it provides opportunity for top management to plan adequate strategy for managing waste in their hotel.

5.4.Practical implications

As the least of the waste management hierarchy is the most preferred option for the hotels in Ouagadougou, the city will continue to face the problem environmental pollution. The municipality authority will also be struggling to resolve the problem of the ton of garbage. Furthermore, the fact that waste water are directly dumped into public sewers without being processed or filtered can generate diseases as part of these water are released at the dam. Landfill are opened places, and most of them are next to housings, therefore, dumping ton of waste can impact human health. Thus study, therefore, will induce hotel managers to promote attitudinal change regarding waste management and to adopt efficient and affective approaches.

5.5.Recommendation

Based on the findings, the conclusion and the implications of this study, it is a requirement for all the hotels to have a waste management department within the property. This department should be in charge of formulating the policies and following up to ensure the execution of the procedures related to waste management. The policies should take into account the purchasing of items and food stuff at the very earlier stage to avoid environmental degradation. For example, order should be done in bulk and requirements should be made to supplier to always use packages that eco-friendly. The waste management team should put in



place a clear process of collecting and sorting waste. Sorting out allows hotels to reuse items or recycle them. Furthermore, all the employees should be provided with training at least twice per year on waste management. Hotels managers should have a partnership with the public institutions in charge of environmental protection to gain support for their staff's training. In addition, an auto-evaluation of the procedures should be done each year by the waste management department in collaboration with the national environmental assessment office (BUNEE). By doing that the hotels can reinforce their policies.

Regarding the minimization of waste, the study recommends that hotels should use material or items which can be usable again and again like cloth bag for laundry service instead of plastic bag or cloth napkins instead of paper ones. For the food and beverage service, hotels should promote the use of usable glass bottle of water instead of plastic bottle. They should remove the single food package especially during breakfast time. For the guest rooms, hoteliers should use the refillable soap, shampooing containers and take off the individuals' guestroom amenities. It is true that putting in place reusable products implied high initial cost but it offers substantial saving over a long period of time. Another option to reduce waste is to recycle waste items. For example, using old curtains made of cloth to manufacture laundry bags. Recovery and composting are other options to reduce the quantity of waste sent to landfill. But because the recovery and composting programs are difficult to be set up within the hotels due to huge investments, the waste management department should collaborate with local recycling agencies.

To sustain their marketing image and expend their social and environmental responsibilities, it will be wise for hotels to get certification from well-known environmental companies like ISO 14001. ISO 14001 and to communicate that to their clients and stakeholders. It will help them also to be lined up with government regulation on waste treatment.



Governments' authorities also have to conduct a serious research on waste generated by the tourism and hospitality industry alone instead of generalizing with others sector. In this case they will be able to set up policies to enhance the implementation of effective waste treatment within hotels and restaurants.

The research finally recommends that waste management should be taught in the professional schools of tourism and hospitality industry so that, the future professionals will understand the importance of it and be committed to its practices.

5.6.Limitation

This study encompassed some limitations that need to be considered in further researches. First, the questionnaires were submitted only to a category of hotels especially the three to five stars rated hotels. Secondly due to limited time, effort and the pandemic of COVID-19 (many hotels especially small hotels were not working), the researcher has been constraint to conduct the survey with a target group only located in one city, of Burkina Faso.

Thirdly as Burkina is a French speaking country, all questions submitted to survey hotels and data collected from them were written in French then, later translated into English. This really played a major role in the few selection of hotels and did not allow the research to conduct an interview.

Though researcher has given assurance about the confidentiality of information, some of the hotels managers were not willing to answer the questionnaires. They feared to give unprofessional information about waste management which can be used against their business. Finally employees' opinions have not been into consideration in this research.

5.7.Opportunity for further studies

Study about waste management practices in the hotel industry is of high importance and further studies need to widen the scope to all type of hotels and to cover all areas of Burkina Faso. A proper auditing to quantify waste from hotels needs to be done. This will be



a way to get a clear picture of hotels' waste impact on the environment and the contribution of its management to the business success. The futures studies should take into consideration customers' preference for sustainable accommodation because this aspect could motivate hoteliers to put in place policies for more sustainable waste treatment.

Researches should also be extended to the total tourism and hospitality industry as a whole to know the real impact of this industry on environment as referred to their waste generation.



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APPENDICES

HOTEL WASTE AUDIT SHEET						
TYPE OF WASTE	HOTEL NAME:					
	Month of:	1	2	2.....	Average (kg)	
	Items					
Recycle/ reuse Items	plastic pack					
	Bottle					
	Mixed plastic					
	Aluminium					
	Glass					
	Newspaper					
	Mixed office paper					
	Cardboard					
	Linen					
Compostable	food /wet waste					
Inert (Direct Disposal)	TRASH (Laminated plastic)					
TOTAL						

source: made by Author based on literature review

Appendix I: Audit form



Appendix II: type of recycle, reuse composite waste

waste reduction	Category of waste
Recycle	Aluminium Can
	steel cans
	Copper wire
	Glass
	Mixed paper
	Used cooked oil
	tin containers
	phonebooks
	computers
	Concrete
	Woodin furnitures
	Vinyl flooring
	ink cartridge
Reuse	bed linen
	napeking & table cloth
Composite	overleft food
	Wet waste
	mix organic
Combusting	Grass
	leaves
	mix organic
	food scraps

Sources: thesis presented to the University of Waterloo by Janeen Tang (2004)



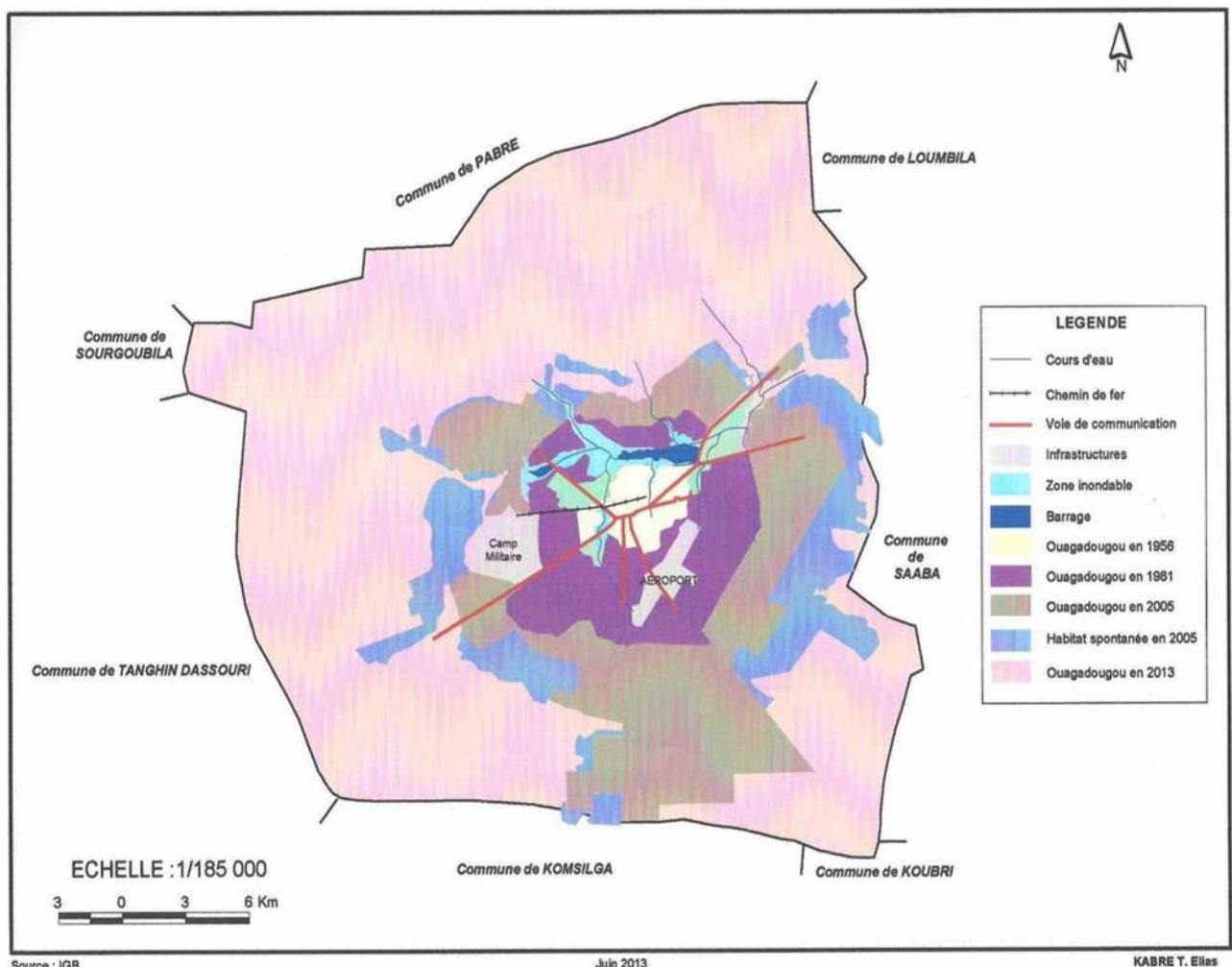
Appendix III List of Hotels in Ouagadougou (3 TO 5 STARS)

N°	NAME OF THE HOTEL	CATEGORY	LOCATION
1	LAÏCO HOTEL OUAGA 2000	5 stars	Ouagadougou
2	BRAVIA HOTEL	4 stars	Ouagadougou
3	RAMADA PEARL HOTEL	4 stars	Ouagadougou
4	SPLENDID HOTEL	4 stars	Ouagadougou
5	HOTEL SOPATEL LE SILMANDE	4 stars	Ouagadougou
6	ROYAL BEACH HOTEL	4 stars	Ouagadougou
7	HOTEL PACIFIC	3 stars	Ouagadougou
8	RESIDENCE HOTELIERE NEBILMA	3 stars	Ouagadougou
9	RELAX HOTEL	3 stars	Ouagadougou
10	HOTEL AMISO	3 stars	Ouagadougou
11	EXCELLENCE HOTEL	3 stars	Ouagadougou
12	RESIDENCE ALICE	3 stars	Ouagadougou
13	HOTEL SORITEL	3 stars	Ouagadougou
14	HOTEL PALM BEACH I	3 stars	Ouagadougou
15	DRAGON HOTEL	3 stars	Ouagadougou

source : Ministry of Culture, Art and Tourisme (Order n° 0109 of january 2019)



Appendix IV Mapping of the Ouagadougou area



Source : Elias. T. KABRE (2013) : A study in hygiene and sanitation in the city of ouagadougou (hygiene et assainissement dans la ville Ouagadougou) pp17



Appendix V: letter to Hotel Management

Date 06/012/2020

Dear Manager,

Participation in research on waste management Practice in the hotel

I am an online-student in the International University of Leadership and part of the MBA program in Project Management. I'm submitting this application letter to request for your participation on my research project. The research is to complete my Master degree program. The title of my study is: Waste management practices and hotels' profitability and sustainability in Ouagadougou.

My belief is that waste is eating away at the monetary and non-monetary benefits of most of the hotels in Burkina Faso. I would specifically like to investigate the current waste status and develop a model one can use in the management of waste. Successful management of waste could lead to financial benefits. This study will let me establish any relationship between waste management and profitability.

I would like to formally invite you to participate in this study. As a manager in a well-established hotel in Burkina Faso, your knowledge and experience would contribute significantly.

The study will be conducted between June and July 2020. Involvement in the study would entail to a questionnaire of three (3) parts submitted to you or one of your middle manager. These questions aim at understanding how your hotel handles daily waste treatment, to evaluate waste management practices in your property, and its effect on your business.

All provided information will be kept confidential. The results of the study will form part of my MSc dissertation report, and may also be reported in academic papers.

Please contact me on the bellowed address to confirm your participation to the study. For the middle time, attached are the questionnaires. Upon request, a summary of my findings can be sent you.

NB: Tel/ 78 05 51 30 or 66 91 86 30

Sikaratououed@gmail.com

I look forward to hearing from you.

Yours faithfully,
Sikaratou OUEDRAOGO



Appendix VI: Questionnaire

Question A: Demographic and respondent's profile

Kindly fill in this questionnaire. The answers are mainly for academic purpose and therefore all information will be kept as confidential.

Section I: Respondent background

1. What is your gender?

Female Male

2. How old are you?

Less than 30 year 30- 40 41-50 > 50

3. Indicate your educational level

A level Under graduate level Post-graduation level

4. How many years are you working in the hotel sector?

Less than 5 years 5-10 years 11- 20 years over 20 years

Section II: Hotel profile

1. How long is the hotel operating? : Years

2. What is the category (stars) of the hotel? :

3. Where is the hotel located? :

4. How many rooms does the hotel have?

5. What kind of tourists are mostly patronizing the hotel? :

6. What is the average occupancy rate per month in low and high session? :

Thanks for the consideration!!



These questions allow the research to evaluate the degree of waste management practice in the hotel.

Please complete these questions with your own thoughts and with regard to the current situation of your hotel, there are no incorrect answers

Nº	Question	YES	NO
1	Do you know what waste management means and its importance		
2	Does your property have policies about waste management		
3	Does the hotel have a specific waste management team as part of the services (department)		
4	Do you provide any training to staff on effective waste management practices		
5	Does the hotel communicate waste management policies to stakeholders (clients, staff, suppliers)		
6	Does the hotel make bulk purchasing to minimize packaging waste		
7	Does your hotel minimize its use of individually bottled guestroom amenities and plastic bags?		
8	Does the hotel minimize its use of disposable items (e.g. plastic bags, plastic tableware, disposable cups, cook caps and aprons, paper napkins) and single serving food packages (e.g. butter, sugar, cream, jams, condiments, milk, juices and cereals)?		
9	Does the hotel segregate waste?		
10	Does the hotel use color bin for waste segregation?		
11	Does the hotel have an effective recycling program for items that can be recycled locally?		
12	Are certain items reused on property when possible, given to staff or donated to charities instead of being thrown away?		
13	Are garden and food waste used for composting?		
14	Does the hotel have an effective program to collect and/or recycle used cooking oil?		
15	Does the hotel sell used cooking oil and recyclable waste (furniture, cardboard box, equipment)		
16	Is unserved leftover food directly sent to landfill?		
17	Does the hotel recycle wastewater for other purpose?		
18	Does the hotel ask suppliers to collect back empty containers?		
19	Is waste storage easily accessible		
20	Does the hotel have a waste storage facilities well designed for waste collection		



QUESTIONNAIRE : PART C/ Effect of waste management practise on profitability and sustainability aspect

To which extent do you think waste management practise can improve your property profitability & sustainability aspects. Mark your appreciation from Disagree; not certain, and Agree & strongly agree

	Designation	Satisfaction level			
		Disagree	Not certain	Agree	Strongly agree
Operational cost	Reduce administratice office cost				
	Decrease in water bills				
	Decrease in cost of packaging material				
	Reduce food cost				
	Reduce waste disposal cost				
	Reduced maintenance cost				
	Reduced garden maintenance cost				
Increase Performance	Increase reservation of rooms				
	Ensure repeat clients				
	Increase of referral businesses				
	Increase number of new customers				
	create new revenue source				
	Increased guest satisfaction.				
Increase Environmental social aspect	Good business image				
	Create employmennt				
	Improved community relations				
	Support local farmers and small recyclers				
	Protection from insect and rodent infestations				