



Waste Management Practices and Operational Performance of Hotels in Lagos State, Nigeria

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ABSTRACT: The objective of this study was to determine waste management practices influencing the operational performance of hotels in Lagos State, Nigeria using 120 structured questionnaire that was administered to 20 hotels. Results showed that waste management practices in hotels are very important (3.83), while levels of their operational performance is to a large extent (3.16). Linear Regression showed that waste reduction, reuse and recycling practices ($\beta = 0.383$), waste collection and depositing practices ($\beta = 0.413$) and waste composting and treatment practices ($\beta = 0.258$) significantly ($p < 0.05$) influenced the operational performance of hotels in the study area. The study concluded that waste reduction, reuse, recycling, waste collection, depositing, composting and treatment practices are important contributors in determining the operational performance of hotels. It was recommended that waste management guiding principles, framework and policies be developed and communicated to all stakeholders for proper and effective implementation.

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The input of resources, as well as the entirety of the systems and processes involved in the operation of production facilities, are of major importance in waste management inside businesses. This is because environmental damage is not the only output of operations that must be considered (Jike, 2004 and Babagbale, 2020). Good waste management practices have a significant impact on a company's operational performance because they increase service delivery efficiency, lower operational costs through effective operations, shorten the time it takes to provide services, improve service quality, and increase productivity (Filimonau and Tochukwu, 2020). As a result, organizations image is improved in the eyes of the public enhancing company's competitive advantage. The challenges of cost containment, higher customer expectations for service quality, and faster

service delivery face organizations (Nguyen and Malik, 2022). Any organization's success is heavily reliant on its ability to adapt to an ever-changing internal and external environment. Implementation of optimal waste management systems minimizes operational cost through waste minimization and efficient manufacturing processes. Waste management also helps organizations improve their hygiene standards, which in turn improves the quality of their services and products. Waste management is concerned with the input of resources as well as the totality of systems and processes involved in the operation of any organization. Firms must practice best waste management practices in order to manage costs effectively, manage operations efficiently, and have a flexible undertaking (Obamen, *et al.* 2019). Thus, waste disposal methods used by businesses have

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an impact not only on the environment but also on operational performance. As large users of consumer goods, the growth of the hotel industry in Nigeria, particularly in Lagos, has raised concerns about service quality and speed of delivery. Hotel running costs are rising as a result of an unplanned sewage system, high food costs, and limited lodging supply. Inadequate solid waste management and reliance on non-recyclable materials pose a significant challenge to hotel operators (Mbama *et al.*, 2022). Hotels operate 24 hours a day, seven days a week, all year, resulting in significant operational costs. Customers are also seeking new items that are compatible with present technology, prompting market participants to design adaptable systems at an additional expense. The hotels have benefited from their environmental initiatives by reacting to consumers' growing environmental concerns, which has increased service delivery speed, cost containment, and resource efficiency, according to research on management commitment to implementation of green practices. To determine the factors that encourage hotels to go green, several research initiatives have been performed (Adetola *et al.*, 2021). Mensah (2020) went on to say that businesses within the same industry generally employ comparable environmental management practices since they share similar situational factors, such as stakeholder relationships and governmental requirements. Since then, several hotels have actively participated in green operating efforts and established an environmentally friendly strategy. Diverse sectors are said to have adopted waste management strategies in an effort to lessen or exhibit further negative impacts on the environment as a result of the current environmental degradation concerns (Filimonau and Tochukwu, 2020). The primary waste management strategies employed by the hotel sector are solid waste collection, reduction, reuse, and recycling, waste composting, and adopting a zero waste management strategy. Due to the fact that hotels use a lot of natural resources and produce garbage that harms the environment, waste management procedures are required in the hospitality industry (Kasavan *et al.*, 2022; Nwokorie and Adiukwu, 2020). Therefore, the objective of this study is to determine waste management practices influencing the operational performance of hotels in Lagos State, Nigeria.

MATERIAL AND METHODS

The research examined Lagos State, a State in South-Western Nigeria with specific emphasis to Metropolitan Lagos. With more than 200 hotels, the State is recognized as the foundation of the hotel industry in Nigeria, with the majority of quality hotels being concentrated in the metropolitan area of Lagos.

The sample frame for this study consisted of 50 hotels that adhered to the National Classification and Grading of Hotels described in the Nigeria Tourism Development Corporation document (2001). Of the sample frame, 20 hotels were purposefully chosen because they were registered with the Lagos State Tourism Board, complied with the grading system described by the Nigeria Tourism Development Corporation (2001), and were willing to participate in the study. These 20 particular hotels made up the sample size of the research.

A cross-sectional primary data was collected at the hotels in Lagos State using the structured questionnaire. A simple random sampling was used in selecting employees by their position from the list of employees provided. A set of 120 questionnaire were retrieved out of a set of 150 questionnaire administered. These retrieved set of questionnaire was further used in the later investigation. This research instrument used statements adopted from previous studies. Respondents were asked to specify on a 5-point Likert-type scale the magnitude to which they agreed with the comments. A few statements were negatively worded and later reverse-scored to check response bias.

A 19-item importance of waste management practices to the hotel scale was used to measure the waste management practices. This was adapted from the scale of Kimeu (2015) on the Likert-type scale of not important (1) to extremely important (5). The listed practices were categorized a priori into three thematic areas for the practices; waste reduction, reuse and recycling; Waste collection and depositing and waste composting.

A 20-item enhancement of operational performance by the implementation of waste management practices scale was used to measure operational performance. The criterion was based on four operational dimensions including operational cost, efficiency, quality of product and service and flexibility. This was adapted from the scale of Kimeu (2015). An index was spawned from the mean of scores of the five point Likert-type scale used in ranking level of enhancement in operational performance of not at all (1) to a very large extent (5).

The data collected was examined and subjected to mean score and regression analysis. The linear regression equation is as shown equation 1:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu \quad 1$$

Where the variables are defined as: Y- Operational performance index; α = Constant; β = Constant; X_1 = Waste reduction, reuse and recycling; X_2 = Waste collection and depositing; X_3 = Waste composting; μ = Error term

RESULTS AND DISCUSSION

Characteristics of the respondents: The results revealed that the mean age of the respondents was 35.1 years implying that majority of the respondents were in the economically active age range, which is in line with the findings of Edeh and Dialoke, (2020).The sex categorization of the respondents showed that most (64.3%) were males. This could be attributed to the fact that most of the respondents used the enterprise as a source of income for the family which is the perceived primary responsibility of males. This result agrees with the finding of Chikezie, (2023). Majority (60%) of the respondents were married suggesting that it could have been the sense of responsibility inherent in the status of being married coupled with the desire to have a source of income that propelled the respondents to work in the hotel enterprise. The major consequence of this is that it can help them to enhance their productivity towards meeting their family needs. This result conforms favourably to the findings of Ogunbamila *et al* (2019).Majority (94.2%) of the respondents had one form of formal education. This result agrees with the findings of Babagbale (2020) who opined that majority of the hotel employees had a form of formal education meaning that they are educated.

Table 1. Characteristics of the respondents

Personal characteristics	Description
Age	Mean = 35.1 years
Sex	Male (64.2%)
Marital status	Married (60%)
Educational level	Formal education (94.2%)

Waste Management Practices: From Table 2 it was observed that procedure for waste collection and depositing was the most important waste management practice (4.56), followed by waste reduction, reuse and recycling (3.63) and waste composting (3.29) respectively. Waste reduction, reuse and recycling entailed practices such as proper systems for the inspection of goods received, food and beverage portioning to reduce food wastage, the existence of operating procedures for the food preparation, repair of hotel equipment and properties, existence of warning sign not to throw any solid waste on the pavement or open areas and provision of reusable items such as napkins, glass cups and ceramic dishes. Waste collection and depositing encompasses practices such as the existence of waste storage facilities designed for waste collection, accessibility of

the waste storage facility, availability of persons or entity that carries, convey, bear or transport solid and liquid waste, extent of the use of dustbins in the operational areas, proper pre-informed waste collection schedules, use of properly coloured bins for differed type of waste and procedure for sewage management systems. Waste composting entailed practices such as extent of composting kitchen waste, availability of waste composting sites, existence of waste composting plants and systems, extent of use of waste to energy technology, enforcement of strict measures for segregation of waste at source, the level of wastewater treatment before disposal, and the use of food waste composting programs.

Table 2. Waste Management Practices

Waste management practices	Mean	Level of importance of waste management practices
Waste reduction, reuse and recycling	3.63	Very important
Waste collection and depositing	4.56	Extremely important
Waste composting	3.29	Important
Grand Mean	3.83	Very important

Operational Performance

From Table 3 it was pragmatic that the level of enhancement of operational performance by the implementation of waste management practices was to a large extent the cost reduction (3.95), quality of products and services (3.84), efficiency in operation (3.54) and flexibility of operations (3.39) respectively. The grand mean of the operational performance by the implementation of waste management practices in the hotels was to a large extent (3.61).Operational performance in terms of cost reduction includes decrease in water bills, decrease in cost of packaging material, reduced food, maintenance, labour cost, and room tariffs.

Table 3.Operational Performance

Operational Performance	Mean	Level of operational performance
Cost reduction	3.95	Large extent
Efficiency in operation	3.54	Large extent
Quality of products and services	3.84	Large extent
Flexibility of operations	3.39	Moderate extent
Grand Mean	3.61	Large extent

Operational performance in terms of efficiency in operation includes variety of services, reduced service delivery time, lead time and customer complaints, increased productivity, readily available services and easy reservation of rooms. Operational performance in terms of quality of products and services includes repeat clients, increase of referral businesses, good public image, high customer loyalty, profit levels,

improved sales and increased number of new customers. Operational performance in terms of flexibility of operations include better services, low rate of staff turnover, reduced operational cost and time of service delivery.

Table 4 revealed the perceived factors that influence waste management practices in the hotels as perceived by the staff in managerial positions, in which competition recorded the highest mean of 4.78, followed by cost and management attitude with a mean of 4.63 and 4.50 respectively while government regulation/policy was the least with a mean of 3.78. This study supported the findings of Oriade et al. (2021) which reported that dynamic competition among hotels encourages them to discover new ways of doing business and new ways of creating value for their customers. This may explain a big presence of hotels which have implemented waste management system with the Green Leaders Program as a result of business competition.

Table 4. Perceived factors influencing waste management practices

Influencing factors	Mean	Rank
Competition	4.78	1 st
Cost	4.63	2 nd
Management attitude	4.50	3 rd
Employee involvement	4.44	4 th
Training	4.28	5 th
Knowledge	4.15	6 th
Customer	4.07	7 th
Incentives	3.79	8 th
Government regulation/policy	3.78	9 th

Effect of waste management practices on the hotel operational performance: The linear equation explained the regression results of waste management practices influencing the hotel operational performance ($R^2 = 0.683$; $p \leq 0.05$). The regression results are presented below:

$$Y = 4.711^{**} + 0.383X_1^{**} + 0.413X_2^{**} + 0.258X_3^{**} + \mu$$

$$R^2 = 0.683; \text{Adjusted } R^2 = 0.439; \text{F Value} = 4.015^{**}$$

Note: ** = ($\alpha_{0.05}$)

From the equation 2, it was observed that holding hotel performance at a significant constant level of 4.711, a unit increase in implementation of waste reduction, reuse and recycling would positively and significantly affect operational performance by 38.3% ($p < 0.05$) while waste collection and depositing practices leads to increase in operational performance by 41.3% ($p < 0.05$). On the other hand, waste composting and treatment practices were positively related to increase in operational performance by 25.8% ($p < 0.05$).

Conclusion: This study concludes that the waste management practices significantly influences the operational performance of hotels in the study area. Based on the findings and conclusions, it is, therefore, imperative that there is a need to understand the best waste management practices to reduce operational cost, increase the efficiency in operation, enhance the quality of products and services and improve the flexibility of hotel operations in the study area. Government agencies and hotels need to develop policies and waste management guiding principles/framework and communicated to all stakeholders for implementation.

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