

Investigating Waste Segregation in Three-Star Hotels in the Takoradi Metropolis

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Abstract

The study sought to investigate waste segregation in 3-star hotels in Takoradi. The objectives of the study were to identify the environmental initiatives and management practices and examine the significance of waste segregation practices amongst hotels in Takoradi. The study applied a non-experimental research approach with a population of forty-five. This comprised managers, housekeeping staff and kitchen staff selected from three (3) 3-star rated hotels in Takoradi Metropolis. The convenient sampling technique was used for the study. The research instrument used in collecting data was a questionnaire containing both closed and open-ended questions. The data was collected and analyzed using the Statistical Package for Social Sciences (SPSS) version 21. The study revealed that there are clear areas for improvement in various aspects of waste management within the hotels. Furthermore, participants strongly believed that hotels should take waste management responsibilities seriously. Based on the findings, the study recommends hotels should actively educate guests through the display of signage on sustainable practices such as energy and water conservation during their stay. Further, hotels should ensure recycling bins are readily available in guest rooms and public areas to facilitate waste segregation and recycling.

Keywords

Waste, Segregation, Hotel, Takoradi

1. Introduction

Proper solid waste management (SWM) is crucial for environmental protection and the well-being of human beings (Chaabane, Nassour, & Nelles, 2018; Lee, 2020). If waste is improperly managed may contaminate soils, water and air thereby affecting the quality of life. Improperly managed waste may also create a

nuisance and make human beings feel uncomfortable (Pham Phu, Hoang, & Fujiwara, 2018). The main components of solid waste management (SWM) are generation, collection, transportation and disposal. Generation of waste is an important stage where source reduction strategies can be implemented. However, for effective management there is a growing interest for waste minimization through reuse and recycling which necessitates incorporation of waste segregation in the waste management stream (Lee, 2020; Pham Phu et al., 2018). When done properly, source waste segregation may reduce the volumes of waste to be handled which would ultimately improve the collection and disposal efficiency. In addition, waste segregation at source may ease handling and processing, enhance the potential for resource recovery, foster reuse and recycling and reduce operational costs.

According to Bui, Tseng, Tseng, & Lim (2022), waste reuse, recycling and recovery (RRR), if well planned and managed, can reduce the amount of waste to be disposed of by up to 65% of the total waste generated. Study indicates that waste recovery and reuse also can yield direct economic benefits (Chaabane et al., 2018; Mbasera, Du Plessis, Saayman, & Kruger, 2016) and help in the protection of public health and environment. With an effective recycling program whereby all the recyclables are taken on board, it is possible to significantly reduce the volumes of waste. For instance, studies indicate that recycling e-waste only (the fastest-growing waste stream in the world) is reported to reduce the volume of waste significantly (Kumar, Holuszko, & Espinosa, 2017; Sbeih, 2023). Recycling of plastic waste, the other large waste stream, is also mentioned to reduce waste volume (Aboelmaged, 2021). Waste reuse and recycling can contribute to income generation and may help to reduce complications in handling and disposing of huge volumes of solid wastes (Bui et al., 2022; Pham Phu et al., 2018). Therefore, incorporating waste segregation at the generation point, collection and disposal stages can promote solid waste (SW) reuse and recycling and may lead to economic and environmental benefits. Recognizing the importance of waste segregation and recycling, many countries have put in place strategies to improve this practice. Some of these strategies involve policy reforms, review of governance structures and improving public awareness.

Because small hotels contribute to the waste problem in cities, any attempt to arrest the problem in cities is bound to fail if hotels are not included in such a plan (Chaabane et al., 2018; Ganesan, Ramesh, & Teja, 2021). As one of the main generators of waste, it is imperative that hotels champion waste management at the destination. Wastes generated by hotels, if not properly managed, could have a debilitating effect on the environment (Ganesan et al., 2021). Dumping of waste at landfill sites often results in leaching and, thereby, polluting underground water sources. Landfilling also leads to the emission of greenhouse gases such as methane and creates unsightly conditions with health consequences. For instance (Farah et al., 2020) reported a waste crisis in Lebanon in 2015, which was mainly caused by the production of solid waste by hotels. Despite the presence of several studies on solid waste management, there is limited information

on factors and reasons for non-segregation of waste at the hotel level and possible strategies for enhancing waste segregation and recycling (Chaabane et al., 2018; Pham Phu et al., 2018).

Studies on waste management practices indicate that waste segregation in many cities including Takoradi is not adequately implemented but instead, waste is all mixed up (Mbasera et al., 2016; Sally & Merrey, 2019). Lack of waste segregation at the source and in the subsequent stages of waste management has been the main challenge. As a result, collection of waste and recycling becomes inefficient. Mixing of waste complicates handling and separation of the recyclables becomes difficult. Lack of recycling denies the opportunity for waste volume reduction and necessitates a significant proportion of the generated waste to be collected, transported and disposed of (Bui et al., 2022). It is against this background that the study sought to investigate waste segregation in hotels within Takoradi Metropolis.

The study sought to investigate the significance of waste segregation practices amongst hotels in Takoradi and recommend possible policy changes on waste management practices of hotels. This study addressed several research needs by providing a study which has been evaluated with environmental management concepts, thereby helping to increase the general understanding of solid waste segregation in hotels and bridge the gap between theory and practice. It also serves as a reference material for further studies.

2. Review of Related Literature

2.1. Waste Management Practices of Hotels

It is an undeniable fact that hotels impact adversely the environment through the generation of solid and liquid waste, emission of dangerous chemicals, and pollution of the atmosphere (Aboelmaged, 2021; Ioannidis, Chalvatzis, Leonidou, & Feng, 2021). Disastrous environmental consequences are bound to occur when wastes are not properly managed. Such wastes could pollute water, land, and air as well as create unsightly conditions. Unscientific and improper waste treatment affects society and damages the environment (Lee, 2020; Pham Phu et al., 2018). Landfilling, which is the least favoured waste management option under the WMH model, results in the greatest impact on the environment. Ironically, that is the most common waste management practice undertaken by small hotels. A study on solid waste management by hotels found that 83% of hotels generated mixed waste which was sent to the landfill, whereas only 17% of hotels had developed small recycling and composting initiatives (Ioannidis et al., 2021; Oteng-Ababio & Grant, 2020). Landfill resulting from wastes from small hotels contributes to the degradation of the environment through the pollution of groundwater through the creation of leachate and the emission of explosive gases like methane (Farah et al., 2020; Mbasera et al., 2016).

2.2. Impact of Hotels on the Environment

Environmental impacts of the hospitality industry have been well documented in

the available literature (Kihila, Wernsted, & Kaseva, 2021; Sbeih, 2023). Since tourist accommodation constitutes the largest sub-sector of the tourism industry, it therefore has undisputable wide impacts on the environment, rendering sustainability in the industry a priority issue. The impacts of hotels on the environment have been in the areas of energy consumption (Ganesan et al., 2021; Sally & Merrey, 2019), water consumption (Farah et al., 2020) solid and liquid waste generation; use of chemicals and atmospheric pollution and displacement of local communities (Sbeih, 2023).

An estimated 75% of the environmental impacts of the hotel industry could be attributed to the excessive consumption of both local and imported non-durable goods, energy and water (Bui et al., 2022; Mbasera et al., 2016). A typical guest produces more than one kilogram of waste per day and this amount doubles on checkout days. However, the amount of solid waste generated is dependent upon the size and type of the hotel, as well as the existence of waste management facilities (Kihila et al., 2021; Pham Phu et al., 2018).

2.3. Environmental Initiatives and Management Practices of Hotels

The hotel industry mostly in developed countries and multinational hotel companies are initiating environmental management programmes (Ganesan et al., 2021; Sally & Merrey, 2019). Environmental management practices in the hotel industry include environmental policy formulation, green purchasing, compliance with environmental laws and regulations, environmental auditing, eco-labelling and certification, waste management and recycling, conservation, environmental education, pollution prevention, environmentally responsible marketing and support for local communities. However, the most popular environmental management practices in the hospitality industry are those geared towards cost savings; waste management, recycling, energy and water conservation (Lee, 2020; Mbasera et al., 2016).

3. Methodology

The study applied a non-experimental research approach and made use of a descriptive survey because the information was collected from managers and subordinate staff within the scope of the study. The purpose was to collect detailed and factual information that depicts an existing observable fact. The population for the study were managers, housekeeping staff and kitchen staff from three (3) selected 3-star rated hotels in Takoradi Metropolis. The total population size was forty-five (45), comprising three (3) managers and forty-two (42) operational staff from the housekeeping department and kitchen respectively. A convenient sampling technique was used as it allows easy contact with respondents about their opinions.

The questionnaire was made up of four sections spanning from demographic characteristics of the respondents, practice and policy changes on waste man-

agement, environmental initiatives and waste segregation practices amongst hotels in Takoradi. Thus, permission was sought from the respective three-star hotel managers for questionnaire administering and each hotel had the following respondent. That is, a manager, housekeeper/supervisor, room attendants, public area cleaner, the linen room, florist, and gardener. The kitchen respondent was made up of the Sous chef, chef de partie (station chef), hot kitchen (grills, sauté), pastry cook, cold food cook, kitchen assistant (cook) pantry man and a trainee. An observation method was also employed to augment the data.

4. Results and Discussions

4.1. Demographic Characteristics

The primary purpose of this section was to describe the participants in this study who completed the survey. This was concerning the following demographic variables: gender, age, academic level, marital status and position of the respondents were discussed in this section. **Table 1** presents the results of the analysis of the respondent's demographic characteristics.

Table 1. Demographic characteristics of respondents.

Variable	Frequency	Percentage (%)
Gender		
Male	21	46.7
Female	24	53.3
Total	45	100.0
Age		
26 - 33	28	62.2
34 - 41	12	26.7
42 years and above	5	11.1
Total	45	100.0
Academic Qualification		
Diploma	10	22.2
SHS/Vocational	5	11.1
HND	16	35.6
Bachelor	13	28.9
Master	1	2.2
Total	45	100.0
Marital Status		
Married	15	33.3
Single	24	53.3
Divorce	6	13.3
Total	45	100.0
Position		
Manager	9	20.0
Housekeeping Staff	19	42.2
Kitchen Staff	17	37.8
Total	45	100.0

Table 1 presents the demographic characteristics of the respondents in the study investigating waste segregation in three-star hotels in Takoradi. In terms of gender, the study found that 46.7% of the respondents were male, while 53.3% were female. This distribution suggests a relatively equal representation of both sexes in the study. This finding aligns with previous studies that have shown a balanced gender distribution in the hospitality industry (Kihila et al., 2021; Mbasera et al., 2016). It indicates that both male and female employees are actively involved in waste segregation practices in three-star hotels in the Takoradi Metropolis.

Regarding age, the majority of respondents (62.2%) fell within the age range of 26 - 33. This indicates that a significant proportion of the workforce in three-star hotels in the Takoradi Metropolis is relatively young. Younger employees may possess more progressive attitudes towards environmental sustainability and waste management practices (Ganesan et al., 2021; Oteng-Ababio & Grant, 2020). Their active involvement in waste segregation initiatives can contribute to the effective implementation of waste management strategies within the hotels.

In terms of academic qualifications, the table reveals that the largest group of respondents (35.6%) held a Higher National Diploma (HND), followed by individuals with a Bachelor's degree (28.9%). This suggests that a substantial proportion of the hotel staff possess higher educational qualifications. Previous research has shown that individuals with higher education levels are more likely to have a better understanding of waste management practices and environmental issues (Kihila et al., 2021). The presence of employees with diverse academic backgrounds can facilitate the adoption of sustainable waste segregation practices in hotels.

Considering marital status, the table indicates that the majority of respondents (53.3%) were single, followed by those who were married (33.3%). This finding suggests that a significant portion of the hotel employees in the study were unmarried. Previous studies have found that marital status can influence individuals' attitudes and behaviours towards environmental issues (Ioannidis et al., 2021). Unmarried individuals may have fewer familial responsibilities, which could allow them to focus more on environmental concerns and engage actively in waste segregation practices.

Finally, the table presents the distribution of respondents based on their positions within the hotels. The highest proportion of respondents (42.2%) were housekeeping staff, followed by kitchen staff (37.8%), and managers (20.0%). This distribution indicates that operational staff members, such as housekeeping and kitchen staff, play a crucial role in waste segregation practices. Their involvement is essential for the effective implementation of waste management initiatives in hotels (Kihila et al., 2021; Mbasera et al., 2016). Managers also have an important role in providing guidance and support to ensure the success of waste segregation programs.

4.2. Policy Changes to the Waste Management Practices of Hotels

This section seeks to identify the existing gaps in practice and recommendations for possible policy changes on the waste management practices of hotels. Because of this **Table 2** and **Figures 1-5** give a detailed description of the result.

The first statement, which focuses on actively encouraging guests to reduce their environmental impact, received a mean score of 2.80. This suggests that the hotel's efforts in promoting energy and water conservation among guests were perceived relatively positively by the respondents. Research has shown that guests who are aware of the hotel's sustainability initiatives are more likely to engage in environmentally responsible actions, such as reducing energy and water consumption (Ayilara, Olanrewaju, Babalola, & Odeyemi, 2020; Kihila et al., 2021). However, it is worth noting that a significant percentage of respondents (40.0%) indicated their agreement (A) with this statement, which demonstrates that there is still room for improvement in raising awareness and encouraging sustainable behaviours among guests.

Table 2. Existing gaps and policy changes to the waste management practices.

Statement	SD	D	N	A	SA	Mean
The hotel actively encourages guests to reduce their environmental impact such as energy and water conservation.	26.7	15.6	13.3	40.0	4.4	2.80
The hotel uses energy-efficient lighting and appliances.	8.9	22.2	24.4	33.3	4.4	3.16
The hotel offers recycling bins in guest rooms and public areas for the disposal of waste.	2.2	11.1	24.4	44.4	17.8	3.64
The hotel conserves water through low-flow showerheads and toilets.	8.9	22.2	22.2	40.0	6.7	3.13
The hotel uses environmentally friendly cleaning products.	0.0	8.9	8.9	55.6	26.7	4.00
The hotel is supporting sustainable and environmentally friendly practices.	4.4	11.1	22.2	42.2	20.0	3.62
The hotel also provides guests with high-quality, healthy options for their stay.	0.0	11.1	33.3	42.2	13.3	3.58
The hotel has taken steps to reduce its carbon footprint by implementing various measures such as energy-efficient lighting, and renewable energy sources to reduce its greenhouse gas emissions and overall environmental impact.	0.0	24.4	28.9	40.0	6.7	3.29
The hotel communicates its environmental initiatives to guests through signage and other means.	6.7	13.3	20.0	40.0	20.0	3.53
The hotel actively engages in community outreach and environmental initiatives beyond its property such as education, donations and advocacy.	4.4	20.0	13.3	60.0	2.2	3.36
The hotel is committed to continuous improvement of its environmental practices such as energy efficiency, waste reduction and recycling.	4.4	11.1	15.6	44.4	24.4	3.73

Note: A mean of; 0.1 - 1.0 indicate Strongly Disagree (SD), 1.1 - 2.0 indicate Disagree (D) 2.1 - 3.0 indicate Neutral (N), 3.1 - 4.0 indicate Agree (A) and 4.1 - 5.0 indicate Strongly Agree (SA).

The second statement, related to the use of energy-efficient lighting and appliances, obtained a mean score of 3.16. This indicates a relatively favourable perception of the hotel's efforts in implementing energy-saving measures. This finding is in line with previous research that highlights the importance of energy-efficient measures in hotels. However, it is important to note that a notable percentage (33.3%) of respondents indicated their agreement (A) with this statement, suggesting that further improvements can be made in this area.

The third statement, which addresses the provision of recycling bins in guest rooms and public areas, received a mean score of 3.64. This indicates a relatively positive perception of the hotel's waste management practices regarding recycling. Moreover, a significant percentage (44.4%) of respondents agreed (A) with this statement, indicating the importance of providing convenient recycling options for guests. This finding is consistent with previous studies that have emphasized the importance of convenient recycling options in hotels (Oteng-Ababio & Grant, 2020). However, to further enhance waste segregation and recycling rates, hotels can provide clearer instructions and signage to educate guests about proper disposal practices.

The fourth statement focuses on water conservation measures such as low-flow showerheads and toilets. It received a mean score of 3.13, indicating a moderately positive perception of the hotel's efforts in conserving water. This finding is consistent with previous research that highlights the importance of water-saving practices in hotels (Oteng-Ababio & Grant, 2020; Sally & Merrey, 2019). However, there is still room for improvement, as a notable percentage (40.0%) of respondents agreed (A) with this statement.

The fifth statement, related to the use of environmentally friendly cleaning products, received a high mean score of 4.00. This indicates a strong perception of the hotel's commitment to using eco-friendly cleaning products. This finding aligns with prior research that underscores the importance of using eco-friendly cleaning products in hotels. Additionally, a significant percentage (55.6%) of respondents agreed (A) with this statement, highlighting the importance of sustainable cleaning practices.

The sixth statement addresses the hotel's support for sustainable and environmentally friendly practices. It obtained a mean score of 3.62, indicating a relatively positive perception. A considerable percentage (42.2%) of respondents agreed (A) with this statement, suggesting that the hotel's efforts in supporting sustainable practices are acknowledged but may still benefit from further enhancements.

The seventh statement focuses on providing high-quality, healthy options for guests' stay. It received a mean score of 3.58, indicating a moderately positive perception. However, it is worth noting that a significant percentage (42.2%) of respondents agreed (A) with this statement, suggesting that there is room for improvement in providing healthier choices for guests.

The eighth statement, which relates to reducing the hotel's carbon footprint through various measures, obtained a mean score of 3.29. This indicates a mod-

erately positive perception of the hotel's efforts to minimize greenhouse gas emissions and overall environmental impact. However, it is essential to note that a notable percentage (40.0%) of respondents agreed (A) with this statement, suggesting that further actions may be required to achieve significant reductions in the hotel's carbon footprint.

The ninth statement addresses the communication of the hotel's environmental initiatives to guests through signage and other means. It received a mean score of 3.53, indicating a relatively positive perception. Moreover, a significant percentage (40.0%) of respondents agreed (A) with this statement, emphasizing the importance of effectively communicating the hotel's sustainability efforts to guests.

The final statement focuses on the hotel's engagement in community outreach and environmental initiatives beyond its property. It obtained a mean score of 3.36, indicating a moderately positive perception of the hotel's involvement in such activities. However, it is noteworthy that a considerable percentage (60.0%) of respondents agreed (A) with this statement, suggesting that the hotel's engagement in community outreach and environmental initiatives can be further strengthened.

The results presented in **Figure 1** provide insights into the current waste reduction strategies implemented in 3-star hotels in Takoradi. Among the strategies mentioned, recycling programs were reported as the most frequently employed waste reduction strategy, with 26.7% of the hotels implementing such programs. Recycling is a well-known waste management approach that aims to divert recyclable materials from landfills and promote their reuse. This finding suggests that hotels in the Takoradi recognize the importance of recycling in waste reduction efforts.

Waste-to-energy (WtE) facilities were also reported as a significant waste reduction strategy, with 24.4% of the hotels implementing this approach. WtE facilities involve converting waste into energy through processes such as incineration or anaerobic digestion. These facilities can help minimize the volume of

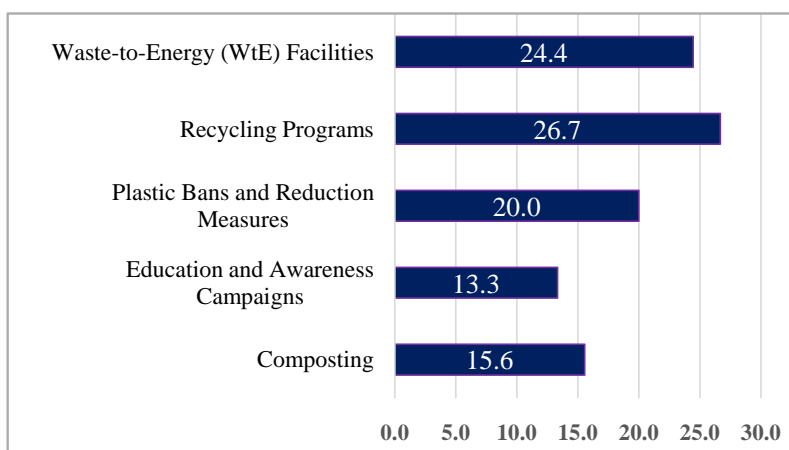


Figure 1. Effectiveness of current waste reduction strategies.

waste sent to landfills and generate renewable energy. The presence of WtE facilities in a considerable number of 3-star hotels indicates a recognition of the potential benefits of this technology in waste management.

Education and awareness campaigns were reported by 13.3% of the hotels, highlighting the importance of educating staff and guests about waste segregation and proper disposal practices. Such campaigns can play a crucial role in promoting behaviour change and encouraging individuals to adopt more sustainable waste management practices. Plastic bags and reduction measures were reported by 20.0% of the hotels, indicating an understanding of the environmental impacts of plastic waste. Plastic pollution has become a global concern, and implementing measures to reduce the use of single-use plastics can help mitigate its negative effects on the environment.

Composting, reported by 15.6% of the hotels, is a valuable waste reduction strategy that involves the decomposition of organic waste into nutrient-rich compost. Composting can help divert organic waste from landfills and provide a sustainable source of soil amendments. However, it appears that a relatively smaller proportion of hotels in the Takoradi Metropolis have implemented composting programs compared to other strategies.

In **Figure 2**, the findings of the study indicate that a significant majority of respondents (62%) believe there is a need for more emphasis on waste segregation in three-star hotels in Takoradi. This suggests that the current waste management practices in these hotels may not be adequately addressing the issue of waste segregation. The high percentage of respondents expressing the need for more emphasis on waste segregation highlights the importance and urgency of addressing this issue in the hospitality industry. Several studies have emphasized the significance of waste segregation in hotels. For example, a study conducted by (Ayilara et al., 2020; Kihila et al., 2021) found that effective waste segregation practices in hotels can lead to substantial reductions in waste generation and associated costs. Another study by (Ioannidis et al., 2021) highlighted the positive environmental impact of waste segregation and recycling in hotels, emphasizing the need for improved waste management practices.

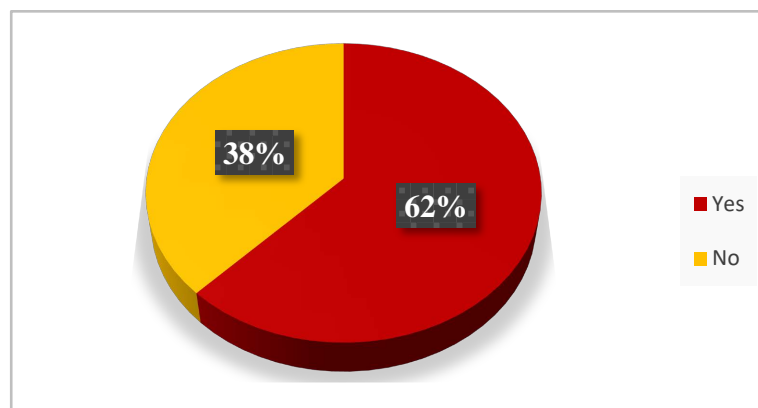


Figure 2. Perceived need for waste reduction, reuse, and recycling programs.

Figure 3 aimed to investigate waste segregation practices in 3-star hotels in the Takoradi. The findings indicate that there is a significant gap in waste segregation practices among these hotels. Out of the total respondents, only 55.6% reported that hotels are effectively segregating waste streams and promoting source reduction at the point of generation, while the remaining 44.4% indicated that hotels are not doing so.

The low percentage of hotels effectively segregating waste streams may be attributed to various factors such as non-awareness and knowledge about proper waste management practices. Further, hotel staff may not have received adequate training on waste segregation techniques and the importance of source reduction. Insufficient infrastructure, such as separate waste bins for different types of waste, may also contribute to ineffective waste segregation.

4.3. Environmental Responsibility of Waste Disposal in Hotels

The study further examined waste segregation practices in 3-star hotels in Takoradi and determined whether hotels were managing their waste disposal in an environmentally responsible manner. The survey results from **Figure 4** revealed that 77.8% of the respondents indicated that hotels were indeed managing their waste disposal responsibly, while 22.2% reported otherwise.

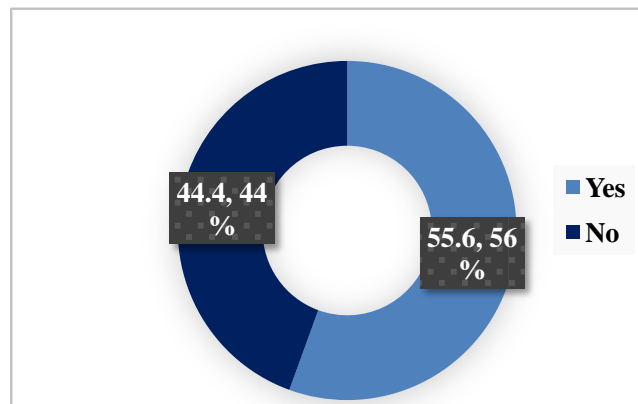


Figure 3. Effectiveness of waste segregation and source reduction in hotels.

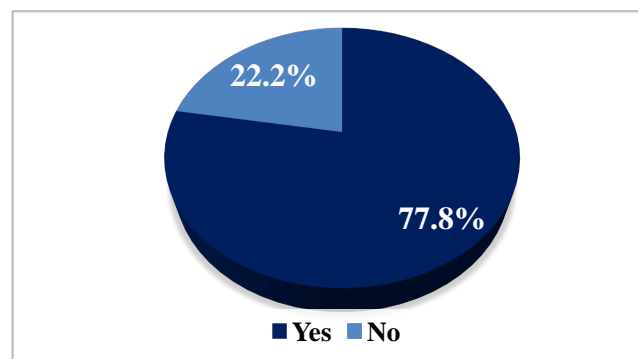


Figure 4. Environmental responsibility of waste disposal in hotels.

These findings suggest that a significant proportion of 3-star hotels in Takoradi are implementing waste management practices that align with environmental responsibility. It is encouraging to see that a majority of the surveyed hotels are likely employing waste segregation methods and adopting proper waste disposal techniques. This indicates a level of awareness and commitment towards sustainable waste management practices within the hotel industry in the region.

However, the study highlights the existence of a minority of hotels (22.2%) that are not managing their waste disposal in an environmentally responsible manner.

4.4. Compliance of Hotels with Waste Management Regulations and Standards

The results presented show the results of a study conducted to investigate waste segregation practices in 3-star hotels in Takoradi. The findings from **Figure 5** indicate that out of the total 45 hotels surveyed, 66.7% of respondents reported complying with waste management regulations, while the remaining 33.3% of respondents did not.

Waste management in hotels is crucial for environmental sustainability and public health. Proper waste segregation helps to minimize the negative impacts of waste generation and disposal, such as pollution, resource depletion, and health hazards. It also enables effective recycling and waste reduction, leading to cost savings and improved environmental performance. Additionally, resource constraints, such as limited financial resources or insufficient waste management facilities, might hinder hotels from implementing effective waste segregation measures.

4.5. Environmental Initiatives and Management Practices of Hotels

Table 3 gives a detailed description of the environmental initiatives and management practices of hotels in Takoradi.

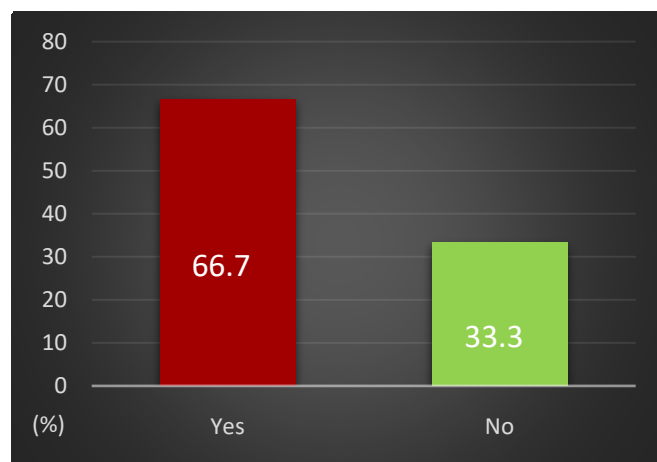


Figure 5. Compliance with waste management regulations and standards.

Table 3. Environmental initiatives and management practices of hotels.

Statement	SD	D	N	A	SA	Mean
The current waste management procedures in hotels are effective in reducing waste such as recycling, composting and reducing single-use plastics.	4.4	11.1	6.7	64.4	13.3	3.71
The current waste management practices in the hotels have gaps or shortcomings that can lead to a negative impact on the environment.	13.3	11.1	20.0	33.3	22.2	3.40
The current waste management practices in hotels do not adequately address the reduction of plastic waste.	0.0	42.2	13.3	42.2	2.2	3.04
The hotel industry should be regulated to ensure that they adopt more environmentally sustainable waste management practices such as waste reduction, guest education and composting.	2.2	6.7	15.6	48.9	26.7	3.91
The government should provide incentives for hotels to adopt environmentally sustainable waste management practices such as low-interest loans, tax credits and rebates.	0.0	2.2	0.0	62.2	35.6	4.31
Hotels should be required to report on their waste management practices and progress towards sustainability goals.	0.0	4.4	8.9	64.4	22.2	4.04
There should be stricter penalties for hotels that do not comply with waste management regulations.	2.2	8.9	6.7	51.1	31.1	4.00
Hotels should work with local communities to promote waste reduction and recycling.	4.4	4.4	4.4	46.7	40.0	4.13
Hotels should prioritize the use of reusable and sustainable materials in their operations.	0.0	4.4	6.7	53.3	35.6	4.20
The hotel industry should collaborate with waste management experts to improve their practices.	0.0	4.4	8.9	60	26.7	4.09

Note: A mean of; 0.1 - 1.0 indicate Strongly Disagree (SD), 1.1 - 2.0 indicate Disagree (D) 2.1 - 3.0 indicate Neutral (N), 3.1 - 4.0 indicate Agree (A) and 4.1 - 5.0 indicate Strongly Agree (SA).

The study assessed the current waste management procedures in these hotels and explored their effectiveness in reducing waste, particularly through recycling, composting, and reducing single-use plastics. The findings from **Table 3** revealed that the majority of respondents (64.4%) believed that the current waste management procedures were effective in waste reduction. This indicates that a significant portion of the hotels in the study area have implemented practices that promote recycling and composting, as well as measures to minimize the use of single-use plastics.

With regards to the gaps or shortcomings in the waste management practices of these hotels that could potentially harm the environment, approximately 33.3% of respondents agreed that there were shortcomings in the current waste management practices. This finding suggests that while some hotels are making efforts to reduce waste, there is still room for improvement in terms of adopting more comprehensive and sustainable waste management practices.

Moreover, the study revealed that a substantial proportion of respondents (42.2%) believed that the current waste management practices in hotels did not

adequately address the reduction of plastic waste. This finding aligns with growing concerns about the environmental impact of plastic waste and the need for the hotel industry to address this issue more effectively. It suggests that there is a need for hotels to focus more on reducing their consumption of single-use plastics and finding alternative, more sustainable materials.

The findings also highlighted the importance of government regulations and incentives in promoting environmentally sustainable waste management practices in hotels. A majority of respondents (48.9%) agreed that the hotel industry should be regulated to ensure the adoption of more sustainable practices, such as waste reduction, guest education, and composting. Additionally, the respondents overwhelmingly supported the provision of incentives by the government to encourage hotels to adopt environmentally sustainable waste management practices, with 62.2% agreeing with this statement. This indicates that stakeholders recognize the significance of policy interventions and financial incentives in driving positive change in waste management practices.

Furthermore, the study suggested the need for increased transparency and accountability in the waste management practices of hotels. The majority of respondents (64.4%) agreed that hotels should be required to report on their waste management practices and progress towards sustainability goals. This finding emphasizes the importance of establishing reporting mechanisms to track and monitor waste management efforts in the hotel industry, promoting transparency and encouraging continuous improvement.

The study also highlighted the potential for collaboration between hotels and local communities in promoting waste reduction and recycling. A significant percentage of respondents (46.7%) agreed that hotels should work with local communities to achieve these goals. This finding aligns with the concept of corporate social responsibility and the importance of engaging with the local community to foster sustainability initiatives.

Finally, the study underscored the significance of utilizing reusable and sustainable materials in hotel operations. The majority of respondents (53.3%) agreed that hotels should prioritize the use of such materials. This finding reflects the growing global trend toward sustainable practices, including the reduction of waste through the adoption of reusable materials and alternatives to single-use plastics.

4.6. Significance of Waste Segregation Practices amongst Hotel

Table 4 gives a detailed description about the result of the significance of waste segregation practices amongst hotels in Takoradi.

The results from **Table 4** demonstrate the significance of waste segregation practices among hotels. Firstly, the survey found that participants strongly agreed (mean score of 4.18) that waste segregation practices are important for the environment. This result aligns with the growing global awareness of environmental issues and the need for sustainable waste management practices.

Table 4. Significance of waste segregation practices.

Statement	SD	D	N	A	SA	Mean
Waste segregation practices are important for the environment.	0.0	6.7	2.2	57.8	33.3	4.18
Hotels should take the responsibility of waste management seriously.	0.0	2.2	0.0	60.0	37.8	4.33
Waste segregation practices can save money for hotels.	0.0	2.2	0.0	68.9	28.9	4.27
Waste segregation practices can improve the image of a hotel.	2.2	6.7	4.4	71.1	15.6	3.91
The hotel uses signage at the reception points to educate its guests.	0.0	13.3	15.6	40.0	31.1	3.89
Waste segregation practices can reduce the negative impact of tourism on the environment.	0.0	2.2	8.9	64.4	24.4	4.09
Waste segregation practices can benefit local communities and their livelihoods such as job creation and reduce health risks such as the spread of diseases and contamination of water sources.	0.0	8.9	6.7	66.7	17.8	3.93
Hotels should prioritize waste segregation practices over other sustainability practices.	2.2	6.7	8.9	51.1	31.1	4.02

Note: A mean of; 0.1 - 1.0 indicate Strongly Disagree (SD), 1.1 - 2.0 indicate Disagree (D) 2.1 - 3.0 indicate Neutral (N), 3.1 - 4.0 indicate Agree (A) and 4.1 - 5.0 indicate Strongly Agree (SA).

Waste segregation helps reduce the amount of waste sent to landfills, minimizes pollution, and conserves natural resources (Ayilara et al., 2020).

Secondly, respondents strongly agreed (mean score of 4.33) that hotels should take the responsibility of waste management seriously. This finding emphasizes the role of hotels in promoting sustainable practices. Hotels have a significant impact on waste generation due to their large-scale operations and high occupancy rates (Oteng-Ababio & Grant, 2020). By prioritizing waste management, hotels can contribute to a cleaner and healthier environment.

Furthermore, participants agreed (mean score of 4.27) that waste segregation practices can save money for hotels. This finding indicates that effective waste management can lead to cost savings. By implementing proper waste segregation and recycling programs, hotels can reduce waste disposal fees, optimize resource utilization, and potentially generate revenue through the sale of recyclable materials.

Additionally, the survey revealed that waste segregation practices can improve the image of a hotel, although to a slightly lesser extent (mean score of 3.91). This finding suggests that guests recognize and appreciate hotels that prioritize environmental sustainability. A positive reputation for waste management practices can attract environmentally conscious guests and enhance the overall brand image of the hotel (Ayilara et al., 2020).

Similarly, the survey indicated that hotels use signage at reception points to educate guests about waste segregation (mean score of 3.89). This result highlights the importance of communication and guest engagement in promoting sustainable practices. Signage and educational materials can raise awareness

among guests, encouraging their active participation in waste segregation initiatives.

The survey also found that waste segregation practices can reduce the negative impact of tourism on the environment (mean score of 4.09). Tourism often leads to increased waste generation, which can strain local waste management systems and harm natural ecosystems. By implementing effective waste segregation practices, hotels can mitigate the environmental consequences of tourism and contribute to sustainable destination management.

Finally, participants agreed (mean score of 3.93) that waste segregation practices can benefit local communities, such as job creation and reduced health risks. This finding aligns with the broader concept of sustainable development, where waste management practices have social and economic implications beyond environmental benefits. Effective waste segregation can create employment opportunities in recycling and waste management sectors, while also reducing health risks associated with poor waste disposal practices.

5. Research Significance and Contributions

The study has made several contributions to literature. First objective aimed to identify existing gaps in waste management practices and provide recommendations for potential policy changes. The study revealed that there are clear areas for improvement in various aspects of waste management within the hotels. These include enhancing guest awareness and participation in sustainable practices, further implementing energy-efficient technologies, ensuring widespread availability of recycling options, and effectively communicating environmental initiatives to guests. It also highlighted the positive impact of hotels' engagement in community outreach and their commitment to continuous improvement in environmental practices.

Further, the study provided insights into the effectiveness of current waste management procedures, identifying both strengths and shortcomings. While the majority of respondents considered the practices adequate, a significant portion acknowledged room for improvement, particularly in addressing plastic waste reduction. Thus, buttressing the importance of regulation, incentives, reporting, and collaboration in promoting sustainable waste management practices.

Taking into consideration the third objective, it emphasized the significance of waste segregation practices, with an overwhelming majority of participants recognizing their importance for the environment, financial savings, hotel image, and mitigating the negative effects of tourism. This additionally emphasis waste segregation was perceived to bring potential benefits to local communities.

6. Recommendations

Based on the findings, the study recommended that hotels should actively educate and encourage guests to adopt sustainable practices, such as energy and wa-

ter conservation, during their stay. Invest in and promote the use of energy-efficient lighting and appliances to reduce energy consumption.

It is recommended, that hotels ensure recycling bins are readily available in guest rooms and public areas to facilitate waste segregation and recycling. Hotels should enhance the visibility and effectiveness of communication about the hotel's environmental initiatives through signage and other channels. As a corporate social responsibility, hotels should continue and expand efforts in community outreach, education, and collaboration to contribute positively to the local environment.

Maintain a commitment to continuously improving environmental practices, including energy efficiency, waste reduction, and recycling. Prioritize measures to reduce single-use plastics and promote alternatives such as reusable materials.

In furtherance to that, hotels should support and comply with regulations aimed at encouraging sustainable waste management practices in the hotel industry. Advocate for government incentives such as low-interest loans, tax credits, and rebates to motivate hotels to adopt environmentally sustainable practices. Implement reporting mechanisms for waste management practices and progress toward sustainability goals to promote accountability. Advocate for stricter penalties for hotels that do not comply with waste management regulations to ensure effective enforcement. Foster collaboration between hotels and local communities to collectively address waste-related issues, promoting sustainable practices.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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