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Influence of Hotel Waste Management Practices on Competitive Advantage of Tourist Hotels in Nyeri County Within Mt Kenya Tourism Circuit

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Abstract

The hotels located within the Mt Kenya Tourism Circuit, which encompasses Nyeri, Laikipia, and Nyandarua Counties, play a crucial role in generating local revenue and providing employment opportunities. However, there have been concerns regarding the diminishing competitiveness of these hotels, as seen by the decline in room occupancy rates and income. The identified substandard waste management techniques in these organizations may serve as a contributing-factor to this drop. The region's inadequate waste management, excessive water usage, and significant energy consumption have been subjects of examination and have prompted inquiries about the level of implementation of environmentally friendly practices in hotels. The purpose of the study was to determine the influence of hotel waste management practices on the competitive advantage of tourist hotels in Nyeri County within Mt Kenya Tourism Circuit. The study used a cross-sectional survey to examine 136 middle-level managers from 57 hotels in Nyeri County, Kenya, representing about 33% of the target population. Data was collected through questionnaires and interviews and analyzed using both descriptive and inferential statistics. The study found a strong correlation between effective waste management and increased competitive advantage for tourist hotels on the Mt. Kenya Tourism Circuit. Statistical analysis and interviews refuted the null hypothesis, confirming that improving waste management directly boosts competitiveness. The high response rate of 88.97% lends credibility to these findings, which are also consistent with previous research advocating for environmentally friendly business practices. The study concluded that the effective waste management is a key driver of competitive advantage for tourist hotels in the Mt. Kenya Tourism Circuit. The study recommended that Tourism Circuit should adopt modern waste management technologies, train staff in sustainability, and educate customers on their eco-friendly practices.

Keywords: *Hotel, Waste Management Practices, Competitive Advantage, Tourist Hotels, Circuit*

1.0 Introduction

The hospitality business plays a crucial role in fostering global economic development. The World Travel and Tourism Council (2018) study highlights the substantial contribution of the travel and tourism sector to the global economy. The hotel industry's market value was approximated at USD 525.57 billion in the year 2018. Projections indicate that this value is anticipated to increase to around USD 611.54 billion by the year 2026, reflecting a compound annual growth rate of 4% (WTTC, 2019). The hotel business in Kenya plays a crucial role in driving economic development and is closely associated with the nation's Vision 2030. Based on the findings of the World Travel & Tourism Council (2018), the travel and tourism industry in Kenya offered job opportunities to over 1.1 million individuals, accounting for approximately 9% of the overall employment rate in the year 2017. In addition, it is notable that the hospitality business made a significant contribution of 9.7% to the gross domestic product (GDP) of the country during the same year (Kenya Hospitality Report, 2018). According to Pereira, Silva, and Dias (2021), the long-term viability and expansion of the hotel business are contingent upon the ability of individual hotels to establish and maintain competitive advantages. The concept of competitive advantage entails the provision of products and services that surpass those of competitors, and is frequently reinforced by the implementation of effective marketing strategies and innovative practices (Murimi, 2020).

However, there is an increasing recognition that placing exclusive emphasis on the quality of products and services is inadequate for maintaining a long-term competitive edge. The significance of environmental sustainability has frequently been disregarded in scholarly discourse (Moise et al., 2021). The significance of green practices in hotels, which refer to measures aimed at reducing negative environmental effects (Wolfe & Shanklin, 2001), is growing in prominence. The aforementioned measures encompass waste management, energy conservation, and water-saving efforts (Abdou et al., 2020; Kang et al., 2012; Berezan et al., 2013). Several countries, including Ireland, Poland, Taiwan, and Malaysia, have initiated efforts to align their hotel business with environmental sustainability standards. This alignment can be attributed to either governmental mandates or as a strategic approach to gain a competitive edge (Hanrahan, 2017; Gheribi, 2018; Chen, 2016; Nisar, et al., 2021). In the context of Kenya, namely within the Mt Kenya Tourism Circuit, the implementation of environmentally sustainable practices within hotels is still in its early developmental phase (Mungai & Irungu, 2013; Murimi, 2020). Despite the pressing concerns emphasized by environmentalists and authorities, there exists a scarcity of scientific evidence that investigates the degree to which the implementation of environmentally friendly practices contributes to the competitive advantage of hotels in this particular region.

1.1 Statement of the Problem

The hotels located within the Mt Kenya Tourism Circuit, which encompasses Nyeri, Laikipia, and Nyandarua Counties, play a crucial role in generating local revenue and providing employment opportunities (Kariuki, 2017). However, there have been concerns regarding the diminishing competitiveness of these hotels, as seen by the decline in room occupancy rates and income (Murimi, 2020). The identified substandard waste management techniques in these organizations may serve as a contributing factor to this drop. The region's inadequate waste management, excessive water usage, and significant energy consumption have been subjects of examination and have prompted inquiries about the level of implementation of environmentally friendly practices in hotels (Murimi, 2020). Pereira et al. (2021) examined the implementation of water management measures, energy-saving bulbs, and progressive garbage disposal in hotels. However, the authors did not go into the precise impact of these environmentally friendly policies on competitiveness. In Murimi's (2020) study, the author

discussed several dimensions of green management within the hotel industry, including green food preparation and green housekeeping. However, the study did not extensively explore the potential effects of these practices on the competitive advantage of hotels. The study conducted by Kariuki (2017) examined the relationship between operational performance and green practices in the coastal region of Kenya. However, the research did not encompass waste management or the potential long-term consequences associated with these practices.

1.2 Objective of the Study

The study sought to determine the influence of hotel waste management practices on the competitive advantage of tourist hotels in Nyeri County within Mt Kenya Tourism Circuit.

2.1 Literature review

Focusing at Egyptian 4 & 5 Green Star Hotels, Abdou, Hassan, Dief and Moustafa (2020) researched on hotel industry contribution towards attaining development which is sustainable through use of green hotel practices. The study found through the use of sound management of waste it contributed positively to achieving sustainable development goals (SDGs). However, it focused on effective waste management practices of SDGs. The current study narrows down to effects of hotel green practices on hotels' competitive advantage. Mensah (2020) used the Waste Management Hierarchy (WMH) model to conduct a research study on the waste management practices of small hotels in Accra. A simple random sampling technique was used in the study. The study included 260 small hotel managers from various parts of Accra. According to the study's findings, hotel waste management practices did not strictly adhere to the WMH model. The study also found that waste disposal, prevention, and reduction practices were the most commonly used, while reuse, recycling, and recovery practices were less commonly used. The study recommended that hotels use the sufficiency approach by positively influencing employees' and guests' attitudes towards waste prevention and reduction.

Pham Phu, Fujiwara, Hoang Minh, and Pham Van (2019) did a research study to identify the issues in Vietnam's solid waste management system. The study used sampling and questionnaire surveys to assess solid waste classification and management practices. The survey found that the tourism destination created everyday trash, with restaurants accounting for a sizable percentage of it. According to the study, the waste composition features high rates of kitchen garbage, tissue, and recyclable materials, resulting in high moisture and a low heating value of waste. Moreover, the study found that stakeholders executed solid waste management procedures evasively, with low rates and efficiency. The study also noted that a significant gap in the solid waste management system is the confusion in waste collection activities, as evidenced by the overload of waste in street bins and the financial loss for the solid waste management system as a result of stakeholders' non-compliance with collection regulation. The study concluded that the mixing of garbage by collection crews after separation at sources, as well as the misallocation of collection time and manners, were the weak spots of the solid waste management system that led to stakeholder non-cooperation.

The study also stated that the gaps and misunderstanding in the solid waste management system were key hurdles in improving the solid waste management system in the tourism destination towards sustainability. Mensah and Ampofo (2021) carried out a study to examine the influence of hotel managers' environmental views on waste management methods in small hotels in a developing country. The study included 246 small hotel managers. The study's findings revealed that managers' environmental views, specifically the anti-anthropocentrism, anti-exceptionalism, eco-crisis, and balance-of-nature elements of the New Ecological Paradigm (NEP) scale, have a considerable influence on hotel waste management methods. The study also found that all of the environmental attitude characteristics had a more substantial influence

on the waste disposal option because, by definition, small hotels in developing countries are more likely to pursue this option.

3.0 Research Methodology

The study employed a cross-sectional survey design. The population used for this study consisted of 170 tourism hotels located in Nyeri County, as reported by the Tourism Regulatory Authority in 2021. The individuals observed in this study were hotel operation managers, hotel chefs, housekeeping managers, or food and beverage managers. The target population consisted of 270 middle-level hotel managers. The study utilized a Stratified random sampling technique to choose a total of 57 hotels, which accounted for approximately 33% of the entire target population. The study's sample consisted of 136 individuals serving as middle-level hotel managers. The selection of tourism officers is conducted using a purposive sampling method, resulting in the selection of nine officers. The study employed the use of questionnaires and interview schedules to gather primary data, namely qualitative data. The process of data analysis encompassed the triangulation of findings obtained from both qualitative and quantitative methods. The researchers collected qualitative data, which were subsequently transcribed and subjected to thematic content analysis. The quantitative data were subjected to analysis using descriptive statistics, which encompassed measures such as means, standard deviations, frequencies, and percentages. In addition, inferential statistics were employed in the analysis. The study employed inferential statistics, specifically regression analysis, to examine the relationship between hotel waste management methods and the competitive advantage of tourist hotels in Nyeri County, located within the Mt Kenya Tourism Circuit.

4.0 Discussion and Findings

The study obtained an extremely high response rate of 88.97%, indicating that the data is highly representative. The study found that the majority of hotels on Mt. Kenya Tourism Circuit have been in operation for 5-7 years and are larger organizations with more than 40 staff. The average daily occupancy is less than 75 customers. The data also reveals a downward trend in revenue from 2018 to 2020, which can be linked to the COVID-19 epidemic and the consequent economic constraints. However, revenue growth has begun to resume beginning in 2021. These findings provide important context for assessing the health of the region's hotel business.

4.1 Descriptive Statistics for Waste Management Practices on Competitive Advantage

This section presents the descriptive statistics relating to waste management practices and their effect on the competitive advantage of hotels in the Mt. Kenya Tourism Circuit.

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Table 1: Descriptive Statistics for Waste Management Practices

Statement	Strongly disagree	Disagree	Don't know	Agree	Strongly agree	Mean	Std. D
Hotel waste residue are properly separated based on whether they are biodegradable or non-degradable	7.40%	2.50%	2.50%	48.80%	38.80%	4.09	1.088
The hotel has clearly labeled waste bins installed at strategic locations	1.70%	1.70%	0.80%	55.40%	40.50%	4.31	0.731
The hotel has a designated waste dump site.	6.60%	1.70%	1.70%	43.80%	46.30%	4.21	1.05
The hotel always uses refillable dispensers for soaps, shampoos, and conditioners	4.10%	0.00%	1.70%	46.30%	47.90%	4.34	0.871
The hotel uses an environmentally-friendly disposal mechanism of solid waste.	5.00%	0.00%	1.70%	43.00%	50.40%	4.34	0.927
The hotel has fully embraced the use of recycle hotel items instead of disposable ones	2.50%	0.00%	0.80%	48.80%	47.90%	4.4	0.747
Collected wastes in the hotel are timely collected for disposal by trusted waste collection entities that carry, convey, bear or transport solid and liquid waste.	5.80%	0.00%	2.50%	47.10%	44.60%	4.25	0.969
Average						**4.277**	**0.912**

Table 1 shows that the majority of respondents agreed to the claims that the hotel waste residue is properly separated based on whether they are biodegradable or non-degradable, with a mean of 4.09 and a standard deviation of 1.088. It also reveals that the majority of respondents (mean of 4.31& standard deviation of 0.731) agreed that the hotel has clearly labeled waste bins installed at strategic locations. In addition, the majority of respondents indicated that the hotel has a designated waste dump site as shown by a mean of 4.21 and standard deviation of 1.05. Moreover, the study showed that the majority of the respondents agreed that the hotel always uses refillable dispensers for soaps, shampoos, and conditioners as revealed by a mean of 4.34 and a standard deviation of 0.871. Further, the majority of respondents stated that the hotel uses an environmentally-friendly disposal mechanism of solid waste as shown by a mean of 4.34 and standard deviation of 0.97. The study also revealed that the majority of the respondents provided that the hotel has fully embraced the use of recycled hotel items instead of disposable ones as revealed by a mean of 4.4 and standard deviation of 0.747. Lastly, the majority of the respondents stated that collected wastes in the hotel are timely collected for disposal by trusted waste collection entities that carry, convey, bear or transport solid and liquid waste as indicated by a mean of 4.25 and standard deviation of 0.969. The overall mean was 4.277 and standard deviation 0.912. This part includes key insights from Key Informant Interviews (KII) in addition to questionnaire-based data to provide a better knowledge of waste management

procedures in the hotel industry. To preserve the authenticity of these informants' opinions, their comments were recorded precisely.

In an interview key informant 5 remarked that:

> "*In our hotel, all waste management methods are centered on prevention. To reduce waste and pollution, many technologies may be utilized throughout manufacturing, use, and disposal. Using less hazardous or harmful materials, current leakage monitoring systems for material storage, novel chemical neutralization techniques to reduce reactivity, or water conservation technology that restricts freshwater inputs in hotels are some solutions*"

In an interview key informant 6 remarked that:

> "*ensuring that the waste is collected only after all of the bins have been filled close to capacity to prevent spillage*"

Key informant 3 stated that;

> "*We were able to recycle or reuse some of the waste that was produced by our hotel on occasion, which allowed us to more efficiently manage the waste that was collected*"

Key informant 3 stated that;

> "*Waste management at our hotel is made more effective by a number of laws, including public health laws and policies*"

Key informant 2 quoted saying;

> "*NEMA has enacted laws that hotels must follow to properly manage their garbage. Managing waste in a sustainable manner is essential. The Peak Hotel is investing in bio-digest, which will turn its solid waste into manure and recycle its water for gardening*"

4.2 Correlation Analysis for Waste Management Practices

Analyses of correlation were performed to evaluate the degree of connection between waste management practices and competitive advantage. As shown in Table 2.

Table 2: Correlation analysis

	Competitive Advantage	**Waste management**
Competitive Advantage	1.000	
Waste management	0.729 0.000	1.000

Competitive advantage is positively and strongly related with waste management (r= 0.729, p=0.000), according to the findings. This means that improving waste management improves competitive advantage.

4.3 Regression Analysis

To find out whether or not there is a statistically significant connection between effective waste management and competitive advantage, a regression analysis was carried out. The results presented in the Tables.

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Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.729a	0.532	0.528	0.714952

Table 3 shows that different waste management were determined to be sufficient factors in explaining competitive advantage. This was corroborated by a coefficient of determination, commonly known as the R square of 0.532. This suggests that waste management explains 53.2% of the variance in the dependent variable, competitive advantage.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.04	1	69.04	135.066	.000b
	Residual	60.828	119	0.511		
	Total	129.868	120			

Table 4 indicates the regression model is significant and supported by F= 135.066, p<0.000) since p-values is 0.000 which is less than 0.05.

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.892	0.195		4.564	0.000
	Waste management	0.743	0.064	0.729	11.622	0.000

Table 5 shows that the constant of 0.892 showed that when waste management is held constant, competitive advantage remained at 0.892 units. The regression of coefficient results shows that waste management and competitive advantage is positively and significantly related (β= 0.743, p=0.000).

Regression model;

CA= 0.892 + 0.743WM

Where,

CA = Competitive advantage

WM = Waste management

4.4: Hypothesis testing for waste management and competitive advantage

The hypothesis was tested using regression analysis. The study sought to test the given null hypothesis:

H_{01} Hotel waste management practices do not significantly influence the competitive advantage of tourist hotels in Mt Kenya Tourism Circuit.

The p-value method was used to test hypotheses in the regression analysis model. If the p value for H01 is greater than the 0.05 significance threshold, accept it; otherwise, reject it. tourist hotels in Mt Kenya Tourism Circuit, Kenya were studied, and a strong correlation between waste management and competitive advantage was found ($p=0.000<0.05$).

Therefore, descriptive results indicated that the majority of participants agreed with the statements on waste management practices. Correlation analysis results revealed that waste management practices ($r= 0.729$, $p=0.000$), are positively and significantly associated with competitive advantage. The regression coefficient results indicated that waste management practices and competitive advantage were positively and significantly related ($\beta= 0.743$, $p=0.000$). Implying that a unit change in waste management practices results in an increase in competitive advantage of tourist hotels in Nyeri county, Mt Kenya Tourism Circuit by an equivalent unit. The null hypothesis that there is no significant relationship between waste management practices and competitive advantage of tourist hotels in Nyeri county, Mt Kenya Tourism Circuit was therefore rejected; and alternative hypothesis adopted that there is significant relationship between waste management practices and competitive advantage of tourist hotels in Nyeri county, Mt Kenya Tourism Circuit. The research's findings correspond with those of Abdou, Hassan, Dief, and Moustafa (2020), who examined hotel green practices and their significance in sustainable development. The study found that waste management methods contributed positively to achieving sustainability goals (SDGs). The research also supports the findings of Molina-Azorn et al. (2018), who found that quality waste management and environmental management allow for improved competitive advantage in terms of both costs and differentiation. Moreover, hotels that adopt quality programs have fewer challenges when implementing environmental management.

5.0 Conclusion

This study provided an in-depth look of the significance of waste management techniques in enhancing the competitive advantage of tourist hotels within the Mt. Kenya Tourism Circuit. The findings indicate that waste management is not solely a corporate obligation, but also a strategic opportunity for attaining a competitive advantage within the hotel sector. The data's high response rate of 88.97% provides assurance on its reliability and representativeness in capturing the characteristics of the hotel landscape in the region. The research highlights the existence of a favorable relationship between efficient waste management and the competitive edge of hotels. This assertion is substantiated by the utilization of statistical analysis and interviews with key informants. The findings from the correlation and regression studies consistently demonstrate a robust association between enhanced waste management techniques and heightened competitive advantage. The findings of the study indicate that a single alteration in waste management strategies leads to a proportional enhancement in competitive advantage, thereby refuting the null hypothesis. Moreover, this study is in line with previous studies, providing evidence to support the assertion that implementing sustainable waste management practices adds to the achievement of wider sustainability objectives. Furthermore, it can also provide organizations with a competitive edge in terms of cost savings and distinguishing themselves from competitors. Based on the aforementioned findings, it is recommended that hotels operating within the Mt. Kenya Tourism Circuit, as well as other places, should incorporate sustainable waste management techniques into their business plans. This initiative is expected to have a positive environmental impact, while also providing a competitive edge in a market that places growing importance on sustainability and ethical business practices.

6.0 Recommendations

Based on the findings and conclusions drawn from this study, the following recommendations are put forward to help tourist hotels in the Mt. Kenya Tourism Circuit enhance their competitive advantage through effective waste management practices: Hotels should employ modern technologies and methods for waste reduction, recycling, and disposal, as they have been proven to contribute to competitive advantage. Staff should be educated and trained in sustainable waste management practices to ensure the successful implementation of these initiatives. Hotels should take the initiative to educate customers about their waste management practices, as an environmentally-conscious clientele can further boost the hotel's reputation and competitive standing.

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