

# Hoteliers in Rajasthan's Understanding and Manner towards Sustainable Food Waste Management.

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**Abstract-** The key sustainability challenges that hoteliers are now focusing on are solid waste management, energy and water conservation, and consumption. The commitment of hoteliers to tackling sustainable food waste management (SWM) in their operations, however, has to be increased. In this piece, we'll look at hoteliers' manner of SWM deployment and their degree of awareness about it. The location for the case study is in Rajasthan. The hotel owners on the destination responded to standardized, self-administered questionnaires that were used to collect the data. The major conclusions generally showed a substantial association ( $r=0.869$ ) between understanding and manner toward SWM to reduce wastage of food. Additionally, it was discovered that hotelier's had more influence over minimizing food waste; hence they were better equipped during the early stages of SWM adoption. However, managing food waste continues to be difficult due to customers' unsustainable food consumption behaviors. Hoteliers are advised to use the idea of sustainability & green practice for each of the tasks involved in managing food waste to successfully reduce food waste. For the benefit of both present and future sustainability, coordinated efforts are required to find creative solutions to food waste management issues.

**Index Terms-** *Human resource practices, performance evaluation, managers, methods, hospitality industry.*

## I. INTRODUCTION

According to data on the worldwide tourist business by [1], in Rajasthan tourism has gained popularity, making a considerable

## II. LITERATURE REVIEW

One of the crucial factors in shaping a company organization's manner and affecting decision-making is understanding [3]. At every step, from the purchase of raw food components to the preparation of food & storage, to the disposal of food waste, to consumption understanding about decreasing food waste should be examined. It also relies on how confident a person is in the good or bad results of his or her activities. A human being with a good manner expects to achieve a good

economic contribution to the region while also creating numerous employment chances. A super-sensitive area and distinctive nature combine to make Rajasthan a desirable tourist destination. One of the key contributors to Rajasthan's expanding tourist economy is the hotel sector. For long-term economic potential, business activities in the hotel sector must adopt appropriate actions and become more proactive in reducing the impacts of the project on the environment. Because food and beverage costs make up a sizable amount of operating expenditures, hoteliers should think about how important it is to minimize food waste. In addition to minimizing food waste, sustainable food waste management (SWM) would also improve resource efficiency commencing the peak of purchase to the end of disposal. SWM would greatly lessen any adverse effects on the environment, alter social perceptions, and promote local action while enhancing economic demands. The majority of hotel owners are unaware that SWM presents one of the most significant changes for resource optimization [2]. Because of this, SWM for the hotel industry has to be thoroughly investigated.

The way hoteliers react to SWM relies on organizational and technical factors. People's awareness of and manner toward sustainable practices are influenced by several organizational and technological factors. The assessment of the link between understanding and manner of the management of food waste will also be a major component of this article. For the benefit of both present and future sustainability, coordinated efforts are required to find creative solutions for the management of food waste in Rajasthan.

result while executing particular behaviors, and vice versa, according to [4].

Moreover, a great good outlook would retain a particular behavior over time, per [5], which found that information alone was insufficient to inspire a person to change his behavior. The results of research by [6], which stated that every action must start with ensured appropriate information and would be the energetic force for the revolution in manner, were interestingly in opposition to this. The possibilities of understanding and manner

toward waste management have generally been described in fascinating outcomes. To better understand how food waste is addressed, understanding and manner should be investigated together rather than individually.

As a result, the research would be better able to provide a plan for cutting both food waste and hotel operating expenses. By evaluating the understanding and manner of hotels in Rajasthan, the study presented aims to fill a research gap linked to SWM.

### III. RESEARCH QUESTION

This essay examines understanding and manner as two main elements that have a significant impact on how people behave [7]. It is anticipated that people's understanding of SWM would affect their opinions and motivate them to take action. This study employs a quantitative methodology to address the following research questions:

1. How well-versed in SWM are hotels, and what is their manner toward it?
2. How strongly are understanding of SWM and manner toward it correlated?

### IV. RESEARCH METHOD

This study was carried out in certain hotels where the accommodations together with food and beverage facilities are taken place. Personal calls and visits were made to the hotels to ask for their participation. Early data gathering was exceedingly difficult since some hotels refused to fill out the survey form while other hotels were undergoing renovations. While some of the completed questionnaires were obtained through online surveys, the researchers physically collected the majority of them. Finally, the 42 hotels returned a total of 42 survey questionnaires. The primary managers of food waste at each hotel served as respondents for this study.

A quantitative technique was used to ascertain how well hotel staff members understood and handled food waste. An open-ended, self-administered survey was employed. Likert scale 1 & 5 being the weakest and the strongest was used to rate the hoteliers' grasp of and approach to managing food waste by denoting "strongly disagree" and 5 denoting "strongly agree." 20 understanding-related items on SWM were therefore divided into four categories. For more information on these constructs' understanding and manner concerning SWM, see Table 1. below. The questionnaire was created after a study of the literature for construct validity and consistency. Utilizing the internal consistency method, the reliability test produced a result of 0.92. This value was accepted because it satisfies the acceptance threshold of 0.70 [8]. Descriptive statistics were the statistical techniques employed in this study. These were all utilized to determine the relationship between manner and understanding. The explanation of the mean score by [9] was used to gauge the degree of understanding and manner regarding SWM.

Factors	Constructs	Description
Understanding	contamination of food waste	Understanding how to store food and buy ingredients might help reduce food waste.
	food preparation Waste	Understanding of how to prepare meals in the kitchen.
	unused food waste	Understanding of how to manage leftovers at a buffet station.
	Consumable plate waste	Understanding of controlling and minimizing consumer waste plate during dining.
Manner	Prevention	Eager to take part in waste separation training and education.
	Reuse	Reuse Eager to use both high- and low-quality leftovers.
	Composting	Willing to engage in future planning for food waste energy recovery.
	Disposal	Manner toward the handling of food waste before disposal.

Table:1 Constructs: understanding and manner toward SWM

### V. DEMOGRAPHIC RESULTS

The demographic details of the respondents are shown in Table 2. There were 50 responders in all (30 males and 16 females). The bulk of responders (63.1%) was between the 30 to 60-year age group. 13% of respondents were aged between 50 and 59, and 17.3% were under the age of 29. According to the survey, 23.9 percent of respondents had a diploma in hospitality and tourism, while 15.2 percent had a diploma in another field of hospitality and tourism.

According to the survey's findings, 65.2 percent of respondents worked in management or operations, and 34.7% were hotel owners (Table 2). Because of the various hotel star ratings, the sample of respondents included a variety of occupations. The operational procedures for managing food waste at the hotels varied, as did the staff members in charge of this task at each establishment. In addition, there were differences in the respondents' job histories in the food and beverage industry. Nevertheless, just 36.9% of One to four years, six to nine years, and more than ten years were the lengths of time respondents had worked in the field.

		Frequency (N=60)	Percent (%)
Gender	Male	30	65.2
	Female	16	34.7
Age	Below 29	8	17.3
	30 until 39	14	30.4
	40 until 49	12	26.0
	50 until 59	6	13.0
	60 above	6	13.0
Education Level	10th	16	34.7
	12th	3	6.5
	Diploma in another field	7	15.2
	Diploma in hospitality and tourism	11	23.9
	UG in another field	5	10.8
	UG in hospitality and tourism	4	8.6
Current Position	Managerial	30	65.2
	Operations	16	34.7
Experience	Below 1 year	4	8.6
	1 year until 4 year	17	36.9
	5 years until 9	9	19.5
	10 year above	16	34.7

Table: 2. Demographic details of the respondents

### Types of Food Waste from Hoteliers

There are four different categories of food waste, according to earlier research by [10]. Food waste before preparation is waste created as a result of excessive food production, peeling, dicing, and overcooking of the customer's dish. Waste is the term used to describe food that has already been cooked in excess but has not yet been consumed. According to research by [11], the significant levels of client plate waste if it adopted the buffet method of meal service. On the other side, if a hotel switched to a la carte dining services, there would be more food waste during preparation. The findings of that study appear to be consistent with those of this study on hotels in Rajasthan. For breakfast and lunch or supper, the majority of Rajasthan hotels have switched to a la carte dining. Because of this, hotels said that compared to other forms of food waste, their establishment created more preparation and client plate waste. The amount of food waste generated by buffet services at hotels in Rajasthan varies daily depending on the sorts of events and celebrations that occur throughout the holiday season. Only 3% of hotels discovered that rotting food waste accounted for the majority of food waste. Larger hotels have vendors that send the fundamental ingredients they need for their meals. The suppliers are chosen based on standards including prompt delivery, consistent product quality,

capacity to sustain the needed volume, and pricing [11]. To avoid food loss and spoilage, hoteliers must also make sure that the raw components provided are in good shape.

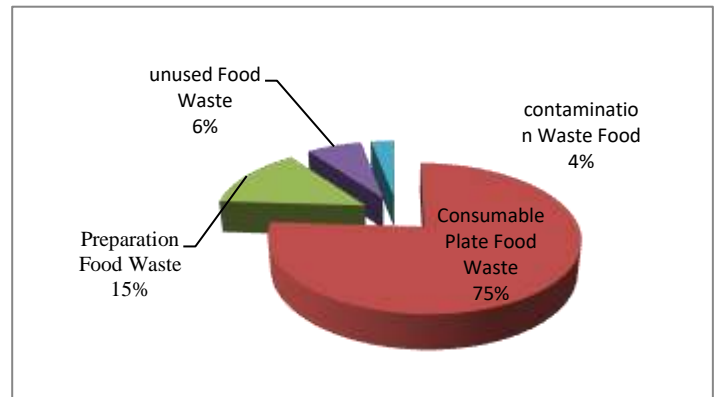


Figure 1. Different waste of food items, according to hotels' perspectives  
Source: [12]

### Hoteliers' Understanding of SWM

The findings show that the average score, however, was only moderate ( $M=2.34$ ,  $SD=0.64$ ) when it came to understanding how to reduce food waste. The number of meals cooked is often calculated depending on the bookings made. However, in case more guests show up that day without bookings, the hotel staff would prepare a bigger amount of meals. ( $M=2.50$ ,  $SD=1.40$ ) and ( $M=5.00$ ,  $SD=0.57$ ), respectively, represent high mean scores for understanding minimizing rotting food waste and preparation of food waste. To minimize last-minute cooking, hotel staff prepares an excessive amount of food, however, this results in wasted food. Therefore, it's essential to estimate client arrivals accurately to prevent having to prepare excess meals. In other words, reservations are needed so that the meal may be prepared for the actual number of diners. In addition, the average rating for "understanding on decreasing customer plate waste" is likewise average ( $M=2.50$ ,  $SD=1.60$ ). The internal operations management of the hotel will typically have an impact on the amount of food waste generated during the stages of procuring the ingredients, food storage, and cooking. Customer plate waste, on the other hand, was out of hotel managers' control because it was controlled by how often visitors ate. Most hotels are equipped near the beginning stages of SWM adoption because they have more influence over decreasing food waste, but they have less control over controlling food waste as a result of patrons' unsustainable food consumption behaviors. However, hotel staff may cut down on client plate waste if they paid extra attention to serving manner, scheduling, and the sort of food offered, as well as if they had a good sense of how many guests they might expect [13]. The results of this study imply that hotels should take the necessary steps to encourage their patrons to decrease food waste.

### Hoteliers' Manner to SWM

Results from an examination into how SWM responds to five kinds of construction materials include prevention, reuse, composting, energy recovery, and disposal. ( $M=5.00$ ,  $SD=0.78$ ) The "manner toward prevention" category received a good average score. To reduce food waste, many hotel operators who embraced a prevention mindset implemented the following strategies: using the first system on food inventory and needing making plans for chefs serving dishes dependent on the number of customer's requirements, etc. [14] identified two primary causes of food waste in the hospitality industry. One involved significant financial reductions, while the other involved following environmental regulations. When contrasted to treatments or other choices like recycling, composting, and energy recovery, preventing food waste is one of the best and simplest actions that can be taken to minimize waste. The emphasis on prevention might alter how business is done and assist in preventing problems associated with food waste in the first place.

Manner toward reuse received a modest mean score ( $M=3.15$ ,  $SD=0.69$ ). Breakfast leftovers are often not permitted to be served again after lunch and must be thrown in the bin due to hygiene and safety reasons. [13] According to them, depending on the meal type, packing, and storage, leftovers might be utilized to create different foods. For instance, meals with higher water content or foods that have been touched cannot be reused since they would degrade more quickly. Also, modest ( $M=3.56$ ,  $SD=0.68$ ) was the mean score for "manner to energy recovery for decreasing food waste." This indicates that hotels are still hesitant about tactics to convert waste into a type of usable sustainable energy. According to research by [5]. The mean score for "manner to composting" and "manner to disposal" was high. This suggests composting might maintain a soil situation that would be easily accessible for landscape needs. According to [9], hotels on islands waste more food since there is a greater demand for food supplies due to an increase in visitors. Composting initiatives are projected to recycle the majority of the food waste from hotels into fertilizers [15]. Waste must be separated for composting and disposal activities to be successful. According to the study's findings, hotels should provide their staff members with sufficient training or instructions to encourage them to adopt the waste hierarchy pyramid to reduce food waste in their facilities.

### Relationship Between Understanding And Manner

Understanding of and manner toward SWM are significantly correlated. This is so because understanding and manner have a very significant link ( $r=0.869$ ) according to the inter-correlation analysis. The positive connection suggests that within the research population, hoteliers' manner toward sustainable food waste management was impacted by their understanding of food waste management. The first step in altering behavior is gaining understanding. However, information by itself is inadequate to alter behavior; rather, the proper manner is needed to achieve the desired behavior over time. Previous research has demonstrated that possessing the required manner does not always follow having the necessary information; people who have the necessary understanding may not always alter their manner toward waste management [7]. In contrast, even though participants in Udomporn's study had a modest degree of understanding of trash management, their manner was quite positive. The results of the current research also corroborate those of studies by [6] which discovered a significant relationship between understanding and manner regarding SWM. The catalyst for altering the manner regarding SWM would be enough understanding, and vice versa.

### VI. CONCLUSION

There is a favorable correlation between hoteliers' understanding and manner toward SWM and their various degrees of education and job titles. However, there was no discernible relationship between gender, age, or experience and the amount of familiarity or manner toward SWM in hotels. The main conclusions of this study pointed to a lack of attention given to food waste in hotel policies, which affected the understanding of and manner toward sustainable food waste management, notably the reuse of high-quality leftover food. The majority of hotel employees strictly adhere to the establishment's food safety policies, but many believe that the guidelines don't go far enough. worry about reducing food waste. Due to the findings of this study, hoteliers must first give significant thought to improving their current food waste management plan with clear goals, actions, and benchmarks for lowering food waste while maintaining sanitary and food safety requirements. To properly manage food waste, hotels must have a fair and all-encompassing policy that covers all aspects of the process from purchase to disposal.

Second, hotel owners must give significant consideration to taking creative action to control patrons' unsustainable food consumption behaviors. The creative approach might take the form of proactive measures to attain SWM that take into account the various cultural backgrounds and preferences of its clients. To create a sustainable food waste management system, the amount of food waste must be reduced. To decrease food waste in an integrated and comprehensive way, further study might look at the understanding and mindset of hotel visitors.

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