

Hotel Food Waste: A Challenge

Dr. A. M. Gurav

Department of Commerce and Management, Shivaji University, Kolhapur, Maharashtra, India.

annasahebg@yahoo.co.in

Abstract

The hotel industry is playing a vital role in providing food and facilities for individuals, groups and carrying various business activities. In the present era hotel industry is also helping boost tourism. Thus, a hotel industry is known as one of prominent service industry where food and accommodation is being provided. The researcher has conducted a study of "Hotel Food Waste : A Challenge". The researcher has interviewed 966 customers and 19 hotel authorities on the basis of 144 parameters with stratified, clustered and snowball sampling methods and has drawn 98 findings, 109 applied suggestions, 12 practicable models regarding the study problem and 18 areas for future research is being suggested. It was found that, prepared food waste is created in different stages and food waste is a national waste and negatively affect revenue of hotels. The study is useful to hotel management discipline and it is useful for controlling wastage of food items. The suggestions are given to turn the wastage into alternative food products for birds and animals, for producing bio-gas and fertilizers, etc.

Key Words : Hotel Food Marketing, Food Waste, Newspapers, Quality of Food, Good Services.

Introduction

The hotel industry has been playing a prominent role in providing food and facilities for the people and for business meetings and conferences. The hotel industry is contributing to national development and supporting the other industries and business activities. In present era hotel industry helps to boost tourism sector because, hotels are of basic importance to visitors. The hotel industry is known as one of the prominent service industry which provides food and accommodations. The researcher has selected problems related to prepared food waste and waste control in the selected hotels of Kolhapur city of Maharashtra state. India has its unique culture, traditions and natural resources that have attracted people from all parts of the world and provided temporary shelter to people in institutions such as 'Saraikhana', 'Panth Niwas', 'Dharma Salas', 'Vihar', 'Hospice', 'Musafirkhana', 'Khanawal' etc. All these institutions were set up for the public as lodging for travelers, those which were similar to the inns in western countries. Considering the importance of hotel industry the research has focused on prepared food and food waste management. In the pilot study, it was found that there was no specific study that was undertaken by this title in the Kolhapur area.

Hotel industry is a service industry where different types of prepared food is marketed and served to the customers. In a pilot study, it was found that marketing of prepared food is challenging and there is a considerable waste of prepared food in the hotels. Due to cut throat competition in the market, the hotels have been offering attractive and substantial quantity and quality of prepared food to the customers whereas the customers are not able to consume the complete dish of ordered and served food.

'FOOD' is the basic need of human being where 'prepared food' management and minimization of waste with maximization of the sale of prepared food is required. So, the researcher has selected a topic entitled, "Hotel Food Waste:A Challenge". The study has covered the perception of customers and attitude of hotel employees with cross-cultural behavior of different customers in the selected area. The researcher has referred age, qualification, number of dependents, income level, frequency of the hotel visit, quality of food, quantity of food, occupation; customers' habits, etc. consisting of 144 variables for knowing the problem of prepared food waste in the sample hotels.

Food waste is created when consumers leave food unfinished and discard the same. According to WHO (World Health Organization), waste is defined as "every substance or object arising from human and animal activities that has to be discarded as useless or unwanted". Considering the global scenario around 30% food creates waste and its approximate

value is 31 crore dollars in developing country. This means 1/3 of food waste is created out of world food production. Although 70% of people in India face hunger problems there is still a 58 thousand crore value of food waste annually created in India (FAO).

The food waste occurs for many reasons, the causes are similar across all over world e.g. food often spoils when consumers buy more than they need with family sized packaging and buy 1, get 1 free offers. Some factors have greater variation and are less understood such as food used in cultural traditions, besides this, food waste at the consumer level is so widespread and it occurs every day in millions of households, food service venues like hotels, schools, hospitals, and other institutions worldwide and treating food waste is a big challenge. The waste created from prepared food waste from residential, hotel, school, hospital, etc., and it is a great challenge for the managing the same.

Considering the problems of prepared food waste as well as its negative impact on the society brought up a need for the study. It was found that there is an increasing trend to visit hotels. Food service industries are amongst fastest growing industries due to their use of dominant marketing activities which influence the customers. But the study also found, lot of food is wasted in the hotel by the consumers. It was also found that, prepared food waste is created in different stages viz after food preparation, before and after food served to customers and during consumption and after consumption. Hence, due to these types of wastes, mostly hotels face escalation in cost such as material cost, labour cost and energy cost, which negatively affect revenue of hotels as well increase liability and risk of hotels. Therefore, prepared food marketing and food waste management has been a challenging task to the hotel industry in India. The study area is Kolhapur in the state of Maharashtra.

Significance of the Study

Prepared food waste is a national waste and it is necessary to prevent it. The study is to identify prepared food waste and reasons for prepared food waste in the selected sample hotels. The study is useful to the Hotel Management discipline and it is useful for controlling wastage of food items. The wastage has been subsequently turned into alternative food products for birds and animals, producing bio-gas and fertilizers etc.

Objectives of the study

- a. To identify the prepared food waste management and alternative reuse of food waste in the selected sample hotels.
- b. To find out the consumer behavior and perception of the consumers in the sample hotels regarding food and food waste.

Hypothesis

- H₀. Management of prepared food waste is not considerably ignored by the hotel authorities in the sample area hotels, where Food Service Management does not require alterations in the selected hotels.
- H₁. Management of prepared food waste has considerably ignored by the hotel authorities in the sample area hotels, where Food Service Management needs alterations in the selected hotels.

Data analysis and interpretation: Hotel food waste-a challenge

Table No. 1 furnishes the factors influencing customers to visit a specific hotel for meals. The researcher has identified various criteria influencing visit to a specific hotel for Food. This study found that the main criteria to visit a specific hotel for food are: quality of food, quantity of food, affordable price and good service, etc. 39% sample respondents have narrated that quality of food is the criteria, and 35% sample respondents have focused on good service. 12% sample respondents have mentioned other reasons which include quality, quantity, price, service, cleanliness and parking etc. About 2%, 5%, 5% and 2% sample respondents have quantity, price, cleanliness and parking criteria respectively for visiting the specific hotel for meals.

It is interpreted that quality of food and good services are the basic criteria for the visit to a specific hotel in the sample area. It was observed that customers are bothered more about quality and services rendered but not the quantity, cleanliness, parking and price. It can be noted that according to the customers; quality of food and services are more important. Food quality is a significant variable in a hotel business. It may be interpreted that better is the quality lesser is the

food waste and vice versa. It is also interpreted that customers are visiting the hotel for quality food which demand very good service from the hotel management. In this study, respondents have also focused on good services. It reveals that services are also very important such as quickness, neatness, and politeness. Hotel industry is in the service sector industry where rendering quality service is more significant. The customers visit the hotels which provide good food, better services and hospitality. The researcher has worked as an honorary waiter in a few hotels for observation and cross checking the collected data. It has observed that the collected facts are true that the customers are really visiting for better hospitality.

People from Kolhapur city are well known for their sense of "good taste". Considering marketing point of view the hotel management should take due care through advertisement regarding quality of food and hospitality. Customers visiting hotels are diverse in nature, where different factors have been affecting on food order and consumption. It is seen that to improve the frequency of customers to visit hotels, effective advertisement and hospitality play a key role. It was seen that customers are very particular about food quality and hospitality. It is noted that quality of food has a significant impact on frequency of visit to a specific hotel. Customers are expecting very good services from the hotel management whereas quantity, price, cleanliness and parking are not priorities for the customers. It means that these variables are less important in comparison with quality and services. It is noted that price, cleanliness and quantity have equal importance in the hotel industry.

To maintain the quality hotel, management should focus on quantity, price and cleanliness in the hotel food. Hotel management should declare quantity of each dish in grams with detail ingredients in it. Hotel Owners Association should establish uniform quantity in all hotels in the food dishes; price should not vary too much in similar type of hotels. Cleanliness should be strictly implemented, and self motivated practices should be adopted in the sample hotels. Workshops, trainings, should be conducted for cleanliness. Japanese concept such as "5 Ss and Six-sigma" should be implemented to provide a better physical environment and for various factors influencing customer preferences. Daily welcome, free prepared pan, visit discount (discount on the number of visits), bill discount (discount on total bill amount), seasonal discount, happy hour discount, discount for couples, 20% to 30% discount on the bill amount, should be provided as an incentive if customer has not wasted any ordered food item, which is practically possible in the study area.

Table No. 2 furnishes the information on approximate cost of food waste per dish. This question was asked to know the cost of food waste; this information is very much required for determination of food waste control strategy. The 79% respondents (majority) said that during prepared food consumption food waste cost is Rs. 10 per dish and remaining 21% sample respondents said that, approximate cost of food waste is Rs. 50 per dish.

Considering the above facts and figures it is interpreted that, in hotels based in Kolhapur there is a huge demand for prepared food by the customers. Visiting the hotels for food is a good indication to the hotel industry as well as it indicates spending power of the people in the study area. It also showed that prepared food waste per dish is Rs. 10 and indicates serious signal to the Indian mass population. Considering per dish, per person and total number of customers in all the hotels in the study area, there is a huge quantity and amount of waste in the hotel industry. Considering the average price of vegetarian per dish is up to Rs. 75 to Rs. 100 (minimum) and non-vegetarian, 'Handi' approximate cost varies from Rs. 250 to 500 per 'Handi'. It is also found that, 10-20 gm prepared food is wasted per dish, which is a considerable quantity. Considering wastage per dish is Rs 10 multiplied by 2 dishes per person multiplied by 168 average customers per day and per hotel multiplied by 19 sample hotels in the study area for 365 days in a year, the quantum of food wastage is Rs 2, 33,01,600 per year and Rs.63,840 per day in the sample area (figures are approximate) [According to customers the per day waste is Rs. 1, 11,685.]

Difference in wastage of ordered food in rupees according to customer's opinion and hotel management opinion is Rs. 47,845. This difference may be the perception of customers and the hotel authority. It indicates that there is a considerable wastage of prepared food in the hotel industry. This data indicates that factual information regarding prepared food waste and it adversely affect the growth and performance of hotels in our country, where the major issue is food security. It is depicted that 10 to 20 gms prepared food waste per dish and its cost is Rs. 10 and selected hotels spending Rs. 1, 11,685 per day which is loss to the economy, especially for developing and underdeveloped countries. This data provided factual information regarding prepared food waste, which negatively affect performance of hotel industry. Moreover, it is understood that prepared food waste arises due to improper marketing and food services.

Table No. 3 furnishes the information on reusing of hotel food waste. This variable has incorporated to know the re-processing of waste food, which is required for taking further steps for waste food processing. The majority (78%) of the respondents said that 'not at all' and equally 11% respondents said 'yes' and 'some time' respectively for Re-using of food waste.

It is interpreted that in Kolhapur city, hotels create considerable quantity of food waste and throw it in the municipal corporation dustbin. 78% of the respondents could not reuse the hotel food waste and remaining 11% respondents reuse prepared food every day and some time respectively. It is interpreted that almost all hotels disposed their prepared food waste through municipal corporation dustbin or van and some respondents 'reuse' prepared food waste for 'Biogas' and 'decomposition' of prepared food waste, which creates manure for agricultural use and indoor plants. However, it is found that prepared food waste usage for 'Biogas' in 2-3 sample hotels. It is depicted that in Kolhapur city area sample hotels (78%) could not 'reuse' of prepared food as like 'Biogas', 'Decomposer' for manure and donation to 'Beggars' etc., this negatively affect the environment and it causes pollution. Thus, it is noted that, prepared food of hotels cause waste hazards to the environment, considering this it is necessary to take collective efforts for food waste control and manure development and researcher has noted that effective marketing facilities helps in mutual development and good prepared food service helps to minimize prepared food waste, for this it is necessary to implement '3R' i.e. Reduce, Reuse and Recycle for effective management of prepared food waste.

Table No. 4 provides the various steps taken for prepared food waste management including: proper collection of waste food from restaurant, classification of waste food, storing of waste food, cleaning of dustbin before and after use, proper transport of waste food and proper dispose of prepared waste food. Herewith, researcher has noted that, these types of steps or waste management practices are found in the selected hotels (Hotel Authorities). This information is required for determination of minimization of food waste strategy in the hotel industry.

From the Table 4 it is found that almost all hotels have been collecting properly waste food from the restaurant i.e. 74% and remaining 26% could not collect waste food, followed by 68% (majority) respondents can't classify prepared waste food and 21% classified prepared waste food and 11% classified 'sometimes', then, 84% respondents said that they store prepared waste food and 16% said 'not at all'. Furthermore, regarding cleaning of dustbin; 89% (majority) respondents opinioned that they cleaned the dustbin before and after use, and 11% respondents sometimes cleaned the dustbin after and before use, and 79% respondents transported prepared food waste everyday through municipal corporation dustbin or van. Moreover, the last step of prepared food waste management is disposal of prepared food waste i.e. 63% (majority) respondents are not disposing prepared food properly, followed by 26% disposed prepared food for 'Biogas' and used as manure and least 11% respondents said that they dispose prepared waste food 'sometimes'.

Considering the above information it is interpreted that almost all selected respondents have collected prepared waste food i.e. 74% but the majority 68% respondents could not classify prepared waste food and collected food generally stored in dustbin and almost all respondents i.e. 84% made the clean dustbin before and after use of it, beside this prepared waste food was transported through Municipal Corporation van or dustbin, but also the majority (63%) respondents could not properly dispose of waste food. This data shows the Kolhapur based hotels adopted general or traditional practice for prepared food waste management (except some hotels) and due to this; hotels are responsible for the environment degradation (except exception). The, researcher suggested that, considering environmental and social responsibility hotel industries should come forward and take concrete decision regarding reuse and dispose of food waste. It is noted that in Kolhapur city area "Kolhapur Hotel Malak Sangh" took initiatives for motivating hotel owners for the prepared food waste management e.g. Biogas, Decomposers for manure, which is good for agriculture and conserve energy and donate edible food to Beggars etc., but these efforts are not satisfactory.

Table No. 5 shows the various methods for disposing of the waste food. To know the problems and consequences of disposed food, this information is essential. The 95% (majority) respondents said that they dispose of prepared food waste through Municipal Corporation dustbin and 5% respondents are using prepared food waste for compost plant i.e. 'Biogas' which is used for food preparation.

It is interpreted that, almost all selected respondents adopt traditional practice of prepared food waste management and dispose prepared food waste through Municipal Corporation dustbin and it is found that 5% respondents are using prepared food waste for compost plant for generation of 'Biogas', therefore, it is observed that the majority of the hotel authorities are not interested to manage effectively the prepared food waste, for which 'Kolhapur Hotel Malak Sangh', should take steps to motivate hotelowners to use prepared food waste for 'Biogas' plant. It is also interpreted that in Kolhapur city area hotels create a huge quantity (20 grams per person X 300 per person, per day, per hotel X 19 sample hotels = 114 Kg.) of prepared food waste per day, which negatively affects on environment and food waste is not good for our nation. Thus, it is noted that, prepared food waste hugely created by hotels, is hazardous to the environment. It is noted that, in Kolhapur city

hotels create the huge quantity of prepared food waste, and almost all hotels use the traditional practice for prepared food waste management (i.e. prepared food dispose of through Municipal Corporation dustbin), and this practice is not scientific in the present situation and which is a hazardous to the environment.

Table No. 6 furnishes the data regarding the total quantity of daily food waste. This attribute has set to know the quantity of daily food waste, which helps for determination of methods of food waste in the hotel industry. 32% sample respondents said that, total quantity of daily food waste is 21-30 kg per day, and 32% have mentioned 'not fixed' followed by 26% said 11-20 kg waste and 10% respondents 'could not' express opinion regarding the total quantity of daily food waste.

It is interpreted that 32% respondents said 21-30 kg total quantity of daily food waste and 26% said 11-20 kg per day and it is noted that 42% (32%+10%) respondents are unaware about quantity of prepared food waste per day. However, it is found that in Kolhapur city, hotels create 30-35 kg prepared food waste per day and aggregate quantity of prepared food waste by selected hotels is approximately 665 kg per day, this waste adversely affects on performance of the hotel, cost of food preparation and environment too. It is also interpreted that in Kolhapur, hotels create huge quantity of prepared food waste, the reason behind that is poor quality of food, the excess quantity of food, bad smell and odour, foreign material in prepared food dish, and improper services etc., all these factors are responsible for prepared food waste.

However, Kolhapur based hotels are trying their level best to provide better services to customers. It is found that, in the sample area hotels have been creating approximately 20-30 kg prepared food waste per day per hotel according to majority sample respondents and on the other hand 42% (32%+10%) respondents are unaware about prepared food waste, and they are not aware about prepared food waste. This data shows the situation of prepared food waste, which adversely affect on the environment and also growth and performance of hotels. The reason behind more quantity of prepared food waste is due to improper marketing practice i.e. improper service provided by untrained staff, ignorance to quality and quantity of prepared food, non cognizance at reception, communication gap between customer and hotel staff (particularly waiter), wrong marketing advertisement (club facilities, packages for family stay) etc. Considering this it is found that this is an important researchable area and needs to be addressed at national level.

Table No. 7 furnishes the information on percentage of waste from per kg of input. The researcher has interviewed the hotel authorities and found that there is a significant percentage of food waste. This information is useful for food waste control. 53% respondents said that 20% food waste is generated from per kg of input and remaining 47% respondents said that 10% of prepared food waste is generated from per kg of input, thus, this data indicates factual information on prepared food waste from per kg of input in percentage.

It is interpreted that, almost all customers said approximately 10% to 20% prepared food waste was created from per kg of input of prepared food. It is also opinioned by respondents that prepared food dish approximately weighs 200-250 gm (considerable variation has found in quantity of dish) and the waste created was to an extent of 10% to 20%. It is also found that 10% to 20% waste created by per kg of input. It has observed that 2 customers have been ordering minimum 3 dishes of prepared food for consumption and considering this daily 450-500 dishes (300 customers per day per hotel multiplied by 1.5 dish per person) is consumed by hotel customers and per dish average weight is 200 to 250 gm. Its mean is approximately 125 kg (250 gms dish multiplied by 300 customers)

From the above factual information, it is understood that 10% to 20% prepared food waste created from per kg of input and this adversely effects on performance of hotels, and it causes waste management problems. The reasons behind is the poor services of prepared food, poor quality and quantity, flavor, interior decoration, cleanliness, promptness, poor communication, arrangement of food etc. Thus, it is found that there is a correlation among influential factors of marketing, prepared food consumption and wastage from per kg of input. It is noted that, 10% to 20% prepared food waste from per kg of input influence the marketing practice of hotel such as promptness, cleanliness, approachability, improper service, lack of study of consumer need, want, and behavior etc.

Conclusion

This research is undertaken from hotel management perspective regarding marketing and prepared food waste and food waste management in the study area. This article has analyzed seven variables by tables, diagrams, statistical tools with deep interpretation, conclusion and findings. The researcher has found quality is the significant criteria behind repetitive visit to hotels. It was found that more than 126 kg average input of raw material is consumed per hotel per day and

average output from 1 kg of input is about 1.5 kg to 1.75 kg. The variables considered in the study are size and weight of the dish, hygiene, food orders determinants, perception of customers, different service offered by the hotels, food consumption and physical personality etc. The perspective of the study is regarding marketing of prepared food and wastage control of food ordered by the customers. The respondents are very eager to minimize the waste. To minimize the ordered food waste the hotel authority should provide food as per requirement of the customers, provide very effective services, provide awareness to the customers to order limited food, to appoint skillful staff, train the customers to order the required amount of food in the hotels. The hotel authority has narrated that the customers are unaware about the food waste control. It is also found that there is no information painted or exhibited regarding 'not to waste food'. Hotel food management is a great challenge for India for Swacch Bharat Abhiyan.

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Table 1. Criteria (s) to visit the specific hotel for Food:

Sr. No.	Particulars	Respondents	Percentage
1	Quality of Food	367	39
2	Quantity of Food	23	02
3	Affordable Price	56	05
4	Good Service	339	35
5	Cleanliness	45	05
6	Sufficient Parking	22	02
7	Other (Specify) All Above	114	12
	Total	966	100

Source: Field Work

Table 2. Approximate Cost of Food Waste (per dish):

Sr. No.	Approximate Cost	Respondents	Percentage
1	Rs. 10	15	79
2	Rs. 20	00	00
3	Rs. 30	00	00
4	Rs. 40	00	00
5	Rs. 50	04	21
6	More than Rs. 50	00	00
	Total	19	100

Source : Field Work

Table 3. Re-using of hotel food waste:

Sr. No.	Re-using of waste food	Respondents	Percentage
1	Yes	02	11
2	Some time	02	11
3	Not at all	15	78
4	Can't Say	00	00
	Total	19	100

Source: Field Work

Table 4. Steps taken for prepared food waste management:

Waste Management Steps	Yes	Some Time	Not at All	Can't Say	Total	Median	Std. Deviation
Proper collection of waste food from restaurant	14 (74%)	00 (00)	05 (26%)	00 (00)	19 (100)	1.00	1.357
Classification of Waste Food	04 (21%)	02 (11)	13 (68%)	00 (00)	19 (100)	3.00	0.841
Storing properly - Waste Food	16 (84%)	00 (00)	03 (16%)	00 (00)	19 (100)	1.00	0.749
Cleaning of dustbin before and after use	17 (89%)	02 (11%)	00 (00)	00 (00)	19 (100)	1.00	0.315
Proper transport of waste food	15 (79%)	04 (21%)	00 (00)	00 (00)	19 (100)	1.00	0.419
Proper dispose off of waste food	05 (26%)	02 (11%)	00 (00)	12 (63)	19 (100)	4.00	1.374

Source : Field Work

Table 5. Methods of Disposing off the Waste Food:

Sr. No.	Disposing off the Waste Food	Respondents	Percentage
1	Our own compost plant	01	05
2	Municipal Corporation Dustbin	18	95
3	Road Side	00	00
4	Not Fixed	00	00
5	Can't Say	00	00
	Total	19	100

Source: Field Work

Table 6. Total Quantity of Daily Food Waste

Sr. No.	Total Quantity of Food Waste	Respondents	Percentage
1	1 - 10 Kg	00	00
2	11 - 20 Kg	05	26
3	21 - 30 Kg	06	32
4	Not Fixed	06	32
5	Can't Say	02	10
6	31 - 40 Kg	00	00
7	41 - 50 Kg	00	00
8	51- 60 Kg	00	00
9	61-70 Kg	00	00
10	71- 80 Kg	00	00
11	81- 90 Kg	00	00
12	91 - 100 Kg.	00	00
	Total	19	100

Source: Field Work

Table 7. Percentage of waste from per kg of input:

Sr. No.	Percentage	Respondents	Percentage
1	10%	09	47
2	20%	10	53
3	30%	00	00
4	40%	00	00
5	50%	00	00
	Total	19	100

Source: Field Work