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Exploring the Effects of Hotel's Management on Food Quality and Safety

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Abstract: *People have started paying more attention to the safety of food, in particular the safety of the food that is served in hotels as a direct result of the increased frequency of concerns over the safety of food over the past several years. It is anticipated that this pattern will carry on. This is especially true with relation to lodging establishments like hotels. The purpose of this essay was to give a suggestion for "a Hazard Analysis and Critical Control Point (HACCP) management system in order to investigate the difficulties that hotels have in regard to the safety of their cuisine. The ultimate goal was to enhance not just the taste but also the level of safety associated with the food that is provided in hotels. It was discovered that the real implementation of the HACCP management system in the hotel catering company resulted in a considerable reduction in the number of germs, a greatly raised the pass rate of tableware cleaning, and a noticeable improvement in the overall level of customer satisfaction. These findings were uncovered when looking into the hotel's connections to the food manufacturing industry. The HACCP management system, as a consequence of this, offers a significant lot of potential applications with regard to enhancing the overall food safety and quality of hotels.*

Keywords: Hotel, Management, Food Quality.

I. INTRODUCTION

"The hotel industry plays a pivotal role in the global economy, serving as a crucial sector for tourism and hospitality. A significant component of a hotel's success lies in its ability to offer high-quality food and maintain the utmost standards of safety. In an era where consumers are becoming increasingly discerning about their dining experiences, the nexus between hotel management practices and food quality and safety has garnered substantial attention within the industry.

This research endeavors to investigate the multifaceted relationship between hotel management and its impact on food quality and safety. It is well-established that the hospitality sector is governed by a complex array of factors, encompassing management styles, operational procedures, staff training, and the utilization of technology. These elements collectively influence how hotels handle, prepare, and serve food to their guests. The consequences of these practices, whether positive or negative, have far-reaching implications for both customers and the hotel's overall reputation.

In recent years, issues surrounding food quality and safety have gained particular prominence, driven by an increasing emphasis on health and wellbeing, the rise of food allergies and intolerances, and a surge in consumer expectations for authenticity, sustainability, and transparency in food service. In response to these developments, hotels must adapt and evolve, integrating modern food management practices into their existing operational framework to meet the changing demands of the contemporary traveler.

This research aims to examine the various facets of hotel management, including personnel training, procurement processes, kitchen organization, and quality control mechanisms, and assess how these aspects contribute to the enhancement or compromise of food quality and safety. Additionally, the study will explore the impact of regulatory and industry standards, technological innovations, and customer feedback in shaping hotel management's approach to food service.

The findings of this research will serve to provide valuable insights for hoteliers and industry stakeholders to improve their food management practices, enhance the overall guest experience, and ensure compliance with evolving food safety regulations. By gaining a deeper understanding of the interplay between hotel management and food quality and

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safety, the hotel industry can better adapt to the ever-changing landscape of guest expectations and industry standards, ultimately ensuring the continued success and sustainability of this critical sector.

Food Safety Regulations and Compliance:

Investigate how well hotels adhere to local, national, and international food safety regulations. This could involve studying the implementation of HACCP (Hazard Analysis and Critical Control Points) systems, food handler training, and the use of food safety management tools.

Staff Training and Practices:

Examine the level of training provided to hotel kitchen and restaurant staff regarding food safety practices. Research how the hotel management ensures that employees follow proper hygiene, sanitation, and food handling protocols.

Food Sourcing and Supply Chain Management:

Analyze the procurement practices of hotels, including the selection of food suppliers, quality control of ingredients, and traceability of food products. How does the management maintain the quality of food from source to plate?

Food Preparation and Handling Processes:

Study the kitchen layout, equipment, and workflows within hotel kitchens and restaurants. Evaluate how the design and organization of these spaces impact food safety and quality.

Food Storage and Temperature Control:

Investigate how hotels store food, including refrigeration and storage practices. Assess how temperature control and monitoring affect the safety and freshness of food items.

Guest Feedback and Complaints:

Analyze guest feedback and complaints related to food quality and safety. Assess how hotels respond to such feedback and the actions they take to prevent future issues.

Technology and Innovation:

Explore how technology and digital tools are used in hotel management to enhance food quality and safety. This might include the use of food safety software, IoT devices, and data analytics.

Staff Turnover and Retention:

Investigate the impact of staff turnover and employee retention on food quality and safety. Frequent turnover can lead to inconsistent practices and a lack of experienced staff in the kitchen.

Crisis Management and Contingency Planning:

Assess how hotels prepare for and respond to food safety crises, such as foodborne illnesses or contamination. Investigate the role of hotel management in implementing effective contingency plans.

Customer Perception and Loyalty:

Examine how guests' perceptions of food quality and safety influence their overall experience and loyalty to a hotel brand. Understand how management can use this information to make improvements.

Sustainability and Food Safety:

Investigate how sustainability practices in the hospitality industry intersect with food safety. For instance, the impact of eco-friendly packaging, waste reduction, and sourcing sustainable ingredients on food quality and safety.

Comparative Analysis:

Conduct comparative studies to assess how different hotels, from budget to luxury, manage food quality and safety. This can help identify best practices and areas for improvement across the industry.

II. RESEARCH METHODOLOGY

Having the hotel follow the HACCP methodology

Despite the fact that the HACCP method is not yet widely used in India, large-scale catering firms in the nation have begun to notice the benefits it offers, despite the fact that it is not yet widely adopted. Despite the fact that the system has not yet been implemented in a comprehensive manner across the country, this is the situation we find ourselves in today. In the course of this research, the HACCP system was modeled after the operations of a hotel in order to facilitate the generation of specific "suggestions for the practical implementation of the system within the hospitality sector." This was done so that the process of developing these recommendations would be facilitated more easily.

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The formation of the HACCP team.

In order to get things rolling, a HACCP team dedicated to the hotel was established. In order for the members of this team to be successful, it was needed for them to get "familiar with the processing flow," which included the purchase, shipping, and storage of raw materials. Furthermore, it was crucial for them to acquire expertise on the fundamental aspects of food safety. For the system to operate in an effective manner, it is necessary for the members of the team to collaborate in order to ensure its proper operation; hence, they must communicate with one another.

An investigation on the administration of food safety risks

As a consequence of this research, a list of the hazards that are now present as a result of "physical, chemical, and biological contamination that may occur during the harvesting, storage, transportation, and processing of raw materials for a variety of foods" has been prepared. This list includes the dangers that are now present as a result of "physical, chemical, and biological contamination that may occur during the harvesting of raw materials for a variety of foods." These hazards are now present as a consequence of "physical, chemical, and biological contamination that may occur during the harvesting, storage, transportation, and processing of raw materials for foods." During every one of these processes, there is always the possibility that one of these dangers will occur. Following that, a comprehensive inquiry into the causes that had contributed to the development of these dangers was carried out (Carbonera et al, 2011).

Purchase process

Because infections, pesticides, gravel, and other forms of pollution account for the great majority of the risks associated with procuring food, a systematic procedure for purchasing food has to be put into place as soon as possible. Following careful consideration of all of the many opportunities for making a purchase, the most appropriate vendors were chosen. In the meanwhile, a comprehensive assessment of the certifications and the raw materials was carried out in order to guarantee that the product's quality would not degrade and that the raw materials would not pose any health risks.

Warehousing for the raw materials

The process of preserving food can sometimes result in the introduction of new substances that could be detrimental to consumers. For instance, the locations where the things were housed did not comply tothe safety regulations, the interior "temperature and humidity levels were not changed to the appropriate state," and so on and so forth were not adhered to. The laws were not followed properly. As a direct result of this, food must be kept in a location that satisfies the prerequisites for an atmosphere that is one that is not just secure but also sanitary.

Raw material roughing and cooking

The lack of a sufficient level of safety awareness among the people who conduct the processing and an improper level of cleanliness of the processing equipment are the primary factors that contribute to the dangers that are connected with roughing. To be more specific, the temperature and the amount of time that are necessary to complete the cooking process are not fulfilled throughout the cooking process. As a direct result of this, knives and other utensils should be maintained in a clean state for the entirety of the processing period, as well as stored in a safe location. Roughing operators should also have their knowledge raised about the importance of preserving a safe working environment. This could be done through education. In addition, the precise kind of food that is being prepared will dictate not only the level of heat that is applied within the oven but also the total length of time that is spent cooking the meal.

Dishing up

When it comes to the process of plating the food, the most important risk is posed by the inefficient operation of both the employees and the palletizing equipment. This risk might have a negative impact on the quality of the final product. Pollution can be caused by a number of factors, including a lack of understanding on the side of the operator regarding the importance of safety, as well as unclean equipment. As a result of this, the condition of the equipment in terms of its hygiene should be thoroughly evaluated, and the SSOP should be used to regulate both the health status of the employees and the extent to which they adhere to proper hygiene standards. In addition, the state of the equipment in terms of its cleanliness should be closely monitored.

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Hotel's primary responsibility for HACCP compliance

Important control points and regulatory constraints It is feasible to control risks at important "control points of a link in the production and transportation process" provided that the appropriate procedures are followed. The judgments that were made and the constraints that were placed on each major control point for each hotel link are listed in Table 1. Error detection and elimination, as well as continuous monitoring, will be crucial future control points. According to Yang et al. (2009), the most important component of the HACCP system is the comprehensive control point monitoring. Monitoring systems for critical control points determine whether or not such points are functioning outside the boundaries of their usual operating settings. Hotel employees are required to monitor "the temperature of the freezer as well as the length of time that the food has been kept at room temperature for each meal" on a minute-by-minute basis when it comes to the storage of raw materials. During the time that the raw materials are being stored, these inspections take place. The person in charge of disinfection is responsible for keeping a record of the name of the disinfectant, its concentration, and the amount of time it was used. The food must be cooked for a sufficient amount of time and reached an internal temperature that is precisely higher than 80 degrees Celsius. At each stage of the tableware disinfection process, a staff member who has been given a specific task is required to record the name of the disinfectant, its concentration, and the length of time it was allowed to disinfect the tableware. Food that has been cooked at an inappropriate temperature and for an inadequate amount of time must either be reprocessed or discarded. While the tableware is being cleaned, this record needs to be retained. Utilization of machinery that does not meet the required standards is another offense. Methodologies for the implementation and verification of HACCP Establish a HACCP plan file that include specific information on critical control points, vital limitations, and corrective procedures. This is an important step. During the HACCP implementation process, records need to be as full and detailed as possible. In order to maintain the dependability of tracking studies, data must be backed up on a regular basis. During the HACCP implementation process, the hotel will design techniques for capturing data that are both scientific and exact. This guarantees that the CCP will be implemented effectively. Important documents are reviewed on a regular basis, and staff members who lack credentials are provided with further training. "Because creating the HACCP system in hotels comprises numerous daily data monitoring problems, effective rules and regulations should be implemented in the meanwhile to assure data correctness and traceability. Because the process entails several difficulties on a regular basis in the monitoring of data. The HACCP damage cleaning will be simplified as a result of this. If the hotel is able to be managed according to the major control points, it must pass a monthly sanitary inspection that is performed by an inspector from the regional health department. It is possible to examine the variations of the operation with and without the HACCP system in order to identify potential health hazards. According to Table 1, the most important control points include the storage of raw materials, roughing, heating, and loading tables. During this inspection, the raw material roughing, cooking colony count, and tableware cleaning procedures of the hotel were evaluated. A study conducted in 2015 and 2016 looked at temperature requirements for food both before and after HACCP was implemented. Following that, the HACCP system was evaluated based on how satisfied the customers were.

Table 1. Judgment and limits of critical control points

Process	Judgment of critical control points	Limits of critical control points
Raw material procurement	This control step is less critical than others since choosing reliable vendors might decrease pesticide exposure when shopping.	
Raw material storage	Since cross-contamination during raw material storage is unavoidable, this control point is crucial. Due to poor storage, cross-contamination can degrade food, threatening food safety. These two criteria make this control point unavoidable.	Separate containers and different temperatures (often between 0 and 5 degrees Celsius "for low temperature refrigeration and 25 degrees Celsius for room temperature refrigeration") are needed for keeping raw and cooked foods. It's also important to keep these temperatures constant.

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Roughing	The Standard Standard Operating Procedure (SSOP) is a "control point for the roughing process since it may be used to manage the staffs that are participating in the process".	No raw materials may be left out "at room temperature for more than three hours, and employees" are required to clean all food and equipment thoroughly and strictly comply to all health requirements.
Cooking	During the process of cooking, if the temperature is not accurately maintained, there is a chance that the food will no longer be safe to eat. This puts the ability of the food to be ingested in a healthy manner in jeopardy. There is no step that comes after this one that can adjust the temperature to fall within the acceptable parameters. Due to the fact that this is the case, it is a vital control point.	In order to ensure that the food will not become contaminated, the temperature in the middle of the plates should be kept at more than 80 degrees Celsius for a duration of ten seconds.
Dishingup	The SSOP is a key control point since it can monitor dishwashing personnel. This is because this control point can be used.	In addition, "Tableware must also be disinfected in accordance with national standards before being" used, with rigorous adherence to GMP and SSOP processes. Before commencing their operation, operators are also obliged to disinfect the area in the proper manner and perform the necessary disinfection steps.

Methods of detection used by the HACCP system are as follows:

Methods used were:

(1) A method for locating colonies: We carried out an investigation to determine the typical number of colonies that were present in fifty distinct sets of table goods before to the introduction of the HACCP system at the hotel, as well as one, three, five, seven, and nine months after the system was put into place. Before the HACCP system was put into place, this research was carried out when the hotel was still in the process of roughing and cooking food. According to Huang et al. (2014), the approach that is used to determine whether or not there are colonies present is referred to as the plate count method.

(2) Disinfection of tableware: a percentage of people that are able to pass the test. In the time leading up to the introduction of the system, it was necessary to amass a total of one hundred distinct dinnerware sets. This was done with the intention of establishing the degree of success obtained by the disinfection process. This technique was repeated once a month on a consistent basis.

III. RESULTS AND DISCUSSION

It was decided to do a comparison between "the total number of colonies both before and after the system" that was implemented.

This discovery was statistically significant ($p>0.01$), as can be seen in Figure 1. It was determined that the normal number of colonies generally ended up being substantially smaller than what was originally predicted, and this finding can be seen in Figure 1. The findings were consistent across each and every one of the fifty distinct dinnerware sets that were put through the testing process.

Tableware disinfection pass rate

As can be seen in figure 2, when the HACCP system was implemented, there was a discernible rise in the percentage of tableware disinfection cycles that were successful. This was the result of a reduction in the number of unsuccessful cycles. This was the end outcome of taking steps to reduce the amount of unsuccessful cycle attempts.

An examination of the temperature transfer rate

The buying division is in charge of making certain that the hotel restaurant always has access to all of the necessary food supplies. This obligation falls squarely on their shoulders. The pass rate, which will be examined on a regular basis

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at the restaurant, will be evaluated in accordance with the following formula: Take the total number of utensils and divide it by the number of utensils that were eligible for testing. This will give you the percentage of utensils that were successful.

The substantial disparity between the two temperatures. Using the following equation, the first thing that needed to be done as soon as the hotel received the food supplies that had been delivered from the warehouse was to determine whether or not there were any food supplies whose temperature had been compromised while they were being transported: This proportion is expressed as a percentage, and it relates to the proportion of acceptable food ingredients compared to the total number of ingredients. The pass rate is expressed as this proportion.

Statistical analysis: The statistical analysis was carried out with the aid of the computer program known as SAS6.12 (Stata Analysis System). The results of the experiment were relayed to the subjects as the average value as well as the standard deviation (x s) for each group. An examination of the differences that can be found between the groups was carried out through the use of a one-way analysis of variance.

The temperature of the food materials after obtaining them, which, to some degree, indicates the management of the temperature of food items while they were being maintained and delivered. The temperature of the food materials after getting them. "The temperature of the food materials after receiving them." Figure 3 demonstrates that during the year that the HACCP system was put into action, there was a substantially higher pass rate of the temperature of the food items as they moved from the warehouse to the restaurant. This was the case despite the fact that the temperature of the food was measured at many points along the route. In spite of the fact that the temperature of the various food products was tested more than thrice, same result was still obtained. This may be shown by comparing the temperatures that were measured of the various food products both before and after the HACCP system was implemented.

Comparison of customer satisfaction

When we were in the midst of installing the HACCP system at the hotel, we made it a point to maintain a record of the amount of customer complaints that were received on a monthly basis. This was done to ensure that we were adequately prepared for any eventuality. There was a perceptible drop in the overall number of complaints when compared to the same time period the year before. This was the case when compared to the current year. The fact that there were no more customer complaints whatsoever ten months after the system was put into place is convincing indication that the strategy was successful in significantly decreasing the quantity of complaints received from customers.

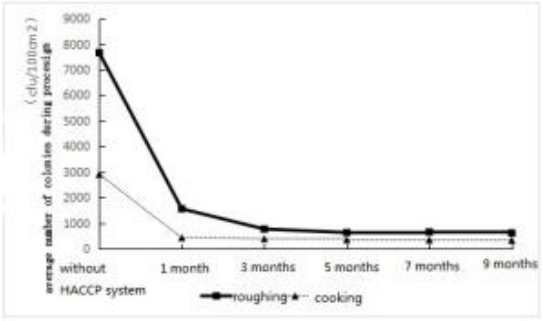

Fig 1. Total number of colonies after roughing and cooking is now complete.

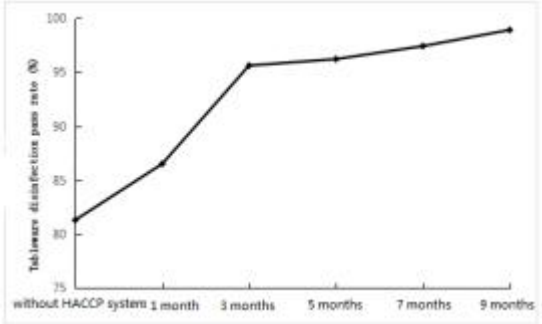

Figure 2. Percentage of clean plates after disinfection

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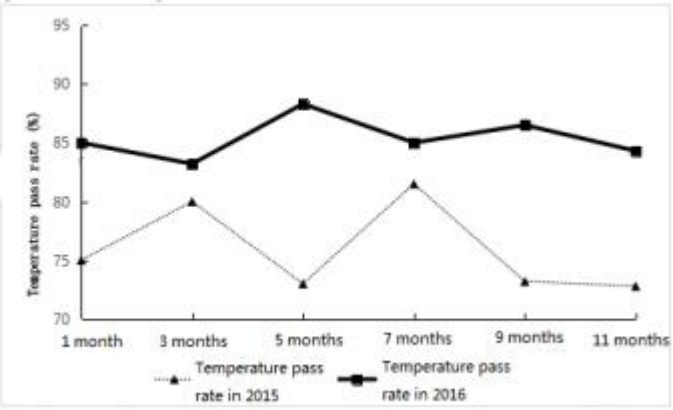

Figure 3. The percentage-point temperature change between 2015 and 2016 is compared.

IV. CONCLUSION

The findings of this study indicate that after a hotel implemented the HACCP system, there was a significant reduction in the number of colonies that were present during the processing stage, a greater percentage of food materials were delivered at the appropriate temperature, and more successfully disinfected tableware was delivered to the restaurant. In the meanwhile, feedback from consumers indicated that they are more satisfied than before.A Few Parting Thoughts The HACCP system was an essential component of the hotel's approach to managing food quality and safety. It was also an inventive addition to the food safety monitoring system and an effective method for guaranteeing that food is safe to consume. The HACCP system is quickly becoming the industry standard for hotel culinary operations, and its widespread adoption is imminent. The HACCP method is a basic answer to the problems plaguing the hotel food sector in terms of food safety, thus this is inevitable. Improvements in guest satisfaction and the enforcement of safety standards can result from the knowledge gained from studies in these areas, which can help hotels and the hospitality industry as a whole make more informed management decisions regarding the quality and safety of the food they serve.

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