ANALYZING THE FOOD SAFETY MANAGEMENT PROGRAMS (HACCP /ISO 22000) IMPLEMENTED IN HOTELS

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ABSTRACT

Food safety management is argued as a case in the food service industry and is considered the most significant item of public health and is therefore of what constitutes food as the utmost importance in human life. A food safety program is a written system that lists the risks to the consumer's health associated with the handling of food in the food industry and describes how those risks will be managed there. The study evaluated food safety programs and the impact of these programs (ISO 2000 / HACCP) on improving the kitchen departments by Analyses of Hygiene audits. The application of HACCP or ISO 22000 was also assessed by applying an observation quantitative checklist in five and four-star hotels in Sharm El Sheikh. The sample of the research consisted of 12 five and four-star hotels in Sharm El Sheikh. The total numbers of four and five Star hotels in Sharm El Sheikh which apply ISO 22000 are 5 hotels. The total number of chosen hotels in Sharm El Sheikh that apply HACCP is 7 hotels. The result found that there was insignificant difference between Before ISO and HACCP where the p-value is greater than 0.05, which means that there is an agreement between the values. On the other hand, the test revealed a statistically significant difference between After ISO and (Before ISO and HACCP) - the p-value is less than 0.05 - which means that there is a disagreement between After ISO and (Before ISO and HACCP).The most important result can be summarized as ISO 22000 in hotels implemented effectively was much better than the HACCP in the hotels that were investigated

KEYWORDS: Food Safety, Food safety management, ISO 22000, HACCP.

INTRODUCTION

Currently, the implementation of food safety management programs is rapidly growing, particularly in light of the sharp rise in the prevalence of

foodborne illnesses. High food safety standards are a key component in achieving consumer satisfaction and promoting food sales (Chen et al., 2022). Safe food is one of the major things that affect people's health. The freedom of wholesome food is a fundamental human right. It is necessary to ensure that the food being sold complies with safety regulations in order to safeguard this right (Ghezzi and Ayoun, 2013).

Tessema et al., (2014) stated that public health is significantly impacted by foodborne illnesses. Unsafe food makes people unwell and causes acute or chronic illnesses in more than 200 disorders, ranging from diarrhea to malignancies to permanent impairment or death. It also makes people sick by harboring hazardous quantities of germs, viruses, parasites, and chemical or physical substances. According to estimates, 600 million people worldwide nearly 1 in 10 get sick after eating tainted food.

FOOD PRODUCTION IN HOTELS

The process of turning raw components into finished dishes and meals is referred to as food production (Hayes and Ninemeier, 2006). Wijaya, and Widodo,(2022) stated that a large hotel's full kitchen consists of the hot section (stock kettles, broilers, grills, steamers, fry kettles, and roasting ovens), grade-manger (cold food), pantry (salad), butcher shop, pastry shop, and occasionally a bake shop, scullery (dish and pot washing area), employees' cafeteria, banquet kitchen(s), and room service kitchen (Dittmer and Griffin, 1997; Bolton & Maunsell, 2004)

Most kitchens have two production areas: a central production area where fundamental preparing of food is done and satellite kitchens where food is finalized and prepared just before serving. (National Restaurant Association Educational Foundation, 2007, 2013).

FOOD SAFETY

According to Raspor and Jevnik (2008) and the FAO/WHO (2009), food safety is the guarantee that food will not hurt consumers when it is handled, prepared, and consumed. From the viewpoint of hospitality, food safety is a task that specifically affects tourists and locals of a tourist destination by strengthening the bonds of empathy between them. (Kafetzopoulos & Gotzamani, 2014).

Food handling, processing, and preparation all fall under the category of food safety, which is connected to food hygiene and ensures that food is safe to ingest, as demonstrated by Kibret & Abera (2012). A procedure or activity is risky if it has the potential to harm the community, environment, or population. They also suggested that identifying food hazards is the first

step in the study of the risk related to food safety. According to Ghezzi and Ayoun (2013), effective food safety procedures guarantee that workers follow personal hygiene precautions and that areas used for food preparation are free of contaminants.

The National Restaurant Association Educational Foundation (2012) listed the following five mistakes as common causes of food borne illness:

- Purchasing food from questionable sources
- Not properly cooking food
- Holding food at the wrong temperature
- Making use of tainted equipment
- Practicing poor personal hygiene

THE IMPORTANCE OF FOOD SAFETY

The important direct consequences on consumer health led to the significance of food safety. To prevent several types of food hazards, such as biological, chemical, and physical risks, it is required to implement and monitor a number of processes (Lu et al., 2014; World Health Organization, 2022).

Lu et al., (2014); World Health Organization, (2022) listed the importance of food safety:

- Decreased chance of eating unwholesome food-related illnesses and fatalities
- A smaller financial loss as a result of food-borne illnesses (such as typhoid, hepatitis A, diarrhea, and dysentery.
- Increased general health, which lessens the demand on the healthcare system.
- Decreased chance of chronic diseases brought on by bad food.

- Increased consumer confidence in the food supply will result in improved economic stability across the entire food industry.

FOOD SAFETY MANAGEMENT

Hung et al., (2015) stated that to ensure that food is safe to eat, food safety management is a systematic way to regulating food safety concerns inside a food business. Food safety management must be established, carried out, and maintained by all businesses.

Baxtiyorovna, (2022) and Al Yousuf et al. (2015) both agreed that more businesses are deciding to have strong food safety management because it is essential to their success. The company's food safety management

programmes help to protect its customers, the community, and its competitive marketplace by ensuring ongoing foodborne illness prevention, promoting the consumption of safe foods, increasing customer confidence, and improving the company's reputation in the marketplace. As per generally accepted norms and rules, an increasing number of businesses are choosing to certify their food safety management systems. Systems for managing the production process ought to be founded on principles and ideas for prevention. (Babeker et al. 2002)

Food Safety Management refers to a set of practices and processes that actively manage risks and hazards along the food supply chain in order to avoid the spread of foodborne illness (National Restaurant Association Educational Foundation, 2014). There are numerous programs that can be put in place to manage foodborne illness (Arvanitoyannis et al., 2016).

THE HAZARD ANALYSIS AND CRITICAL CONTROL POINT (HACCP)

Developed by Motarjemi in 2000, the Hazard Analysis and Critical Control Point approach is a widely accepted and advised method of managing food safety. Varzakas (2015) stated that the HACCP programme recognizes the preventative nature of essential managerial control and is created to ensure that hazards are prevented, removed, or lowered to a permitted level before food reaches the customer.

International experts in food safety agree that the HACCP system is the best method for preventing and controlling foodborne illnesses (Ropkins & Beck, 2000; Kafetzopoulos, et al., 2013; Cho, Lee, 2020). Lu, et al., 2014; Chen, et al., 2021; Fathurrahman et al., 2021 concurred that Hazard Analysis Critical Control Point (HACCP) is one of these systems that is built on seven principles:

1) Conduct a hazard analysis.
2) Determine critical control points (CCPs)
3) Establish critical limits.
4) Establish monitoring procedures.
5) Identify corrective actions.
6) Verify that the system works.
7) Establish procedures for record-keeping and documentation.

H1: There is a significant relationship between the HACCP and food safety in food Production areas in hotels.

FOOD SAFETY MANAGEMENT SYSTEM (ISO 22000)

Both Grumezescu, & Holban (2018) and Ren, Luning, and 2022 concurred that ISO 22000 was published on September 1, 2005. It is an international system that combines the foundational principles and demands of HACCP and the foundational principles of ISO 9001. Two years later, the ISO organisation has replaced the more than 20 food safety systems products that were developed by all businesses in the industry to assess their food suppliers using the food safety standards in the framework of the new system, which has been adopted in more than 50 countries. According to Purwanto and Afoakwa (2013), who agreed with Surak (2007) that ISO is an internationally recognised standardisation organisation that creates various standards, including standards for food production, (Afoakwa 2013; Purwanto, 2022) outline the standards that businesses directly or indirectly connected to the food supply chain or offering services related to food that may have an impact on food safety must adhere to.

Abebe et al. (2020) agreed with Faergemand & Jespersen, (2004) that the ISO 22000 international standard classifies the requirements for a food safety management system. This standard provides more clarification on the notion of prerequisite programmes, which is further separated into operational pre-requisite programmes and infrastructure and maintenance programmes. Infrastructure and maintenance programmes are used to address the fundamental requirements of food hygiene and are recognized as good practice of a more continuous nature. Operational pre-requisite programmes are used to control or lessen the impact of introduced food safety hazards in the product or the processing environment. All institutions involved in the food chain, including feed producers, first-tier producers, food producers, transport and storage dealers, and subcontractors, may be subject to the requirements of ISO 22000.

H2: There is a significant relationship between ISO 22000 and food safety in food Production areas in hotels.

METHODOLOGY

Analyses of Hygiene audit: the objective of this audit is to assess the current situation of Food Hygiene and Sanitation at hotels and to alert management to any potential food safety hazards, which may exist resulting from improper food handling with the assistance of some food safety firms. Hygiene audit includes the different areas food premises of the hotel:

- Food preparation areas (Main kitchen and outlet kitchen) Receiving areas.

- Storage facilities: Dry storage, Cold storage Dining Areas
- Personal Hygiene & staff facilities Main service bar
- Garbage Area Pot washing area
- Dish washing area

Audit scoring system: the audit checklist contains many sections such as (Cold Area- Hot Area- Vegetables Preparation area- Fish area - Butcher Area…..etc.) with a number of questions; objective evidence gained during the audit answers these questions **"** Conform" or "non-conform"

- Conform = Two (2)
- Minor non – conformance = One (1)
- Major non – conformance = Zero (0)

Indication of performance depends on the total score obtained from the audit

- Audit score (0.75 From Total Audit)
- Results of microbiological analysis of food and swab & water samples. (0.25 from total Score)

The obtained results of the hygiene audit were gathered, tabulated, and analyzed based on scientific methods of analysis. In my analysis, I depended on statistical measures (mean, standard deviation, Minimum, Maximum and 95% Confidence Interval for Mean.

THE SAMPLE

To obtain results for showing the desired purpose of this research, it was conducted on five and four star hotels in Sharm El Sheikh. The total numbers of four and five Star hotels in Sharm El Sheikh which apply ISO 22000 are 5 hotels. The prime reason for choosing these hotels is that the selected hotels are the only hotels in Sharm El Sheikh that apply ISO 22000. The total numbers of chosen hotels in Sharm El Sheikh which apply HACCP are 7 hotels. The prime reason for choosing these hotels is that the selected hotels belonged to international and local chains; these hotels follow modern management and also follow practices and policies of food safety management more than any other type of hotels.

RESULTS AND DISCUSSIONS

[1] Describing the views of the Audit Score (Analyses of Hygiene audit)

Table (1) describes the values of the Audit Score through statistical measures (mean, standard deviation, Minimum, Maximum and 95% Confidence Interval for Mean).

food Production areas		Mean	Std. Deviation	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
Cold Area	Before ISO	0.71	0.03	0.67	0.75	.70	.75
	After ISO	0.98	0.02	0.96	1.01	.96	1.00
	HACCP	0.79	0.10	0.66	0.92	.65	.90
	Total	0.83	0.13	0.75	0.90	.65	1.00
Hot Area	Before ISO	0.80	0.05	0.71	0.88	.75	.87
	After ISO	0.98	0.01	0.96	1.00	.97	1.00
	HACCP	0.79	0.09	0.67	0.90	.70	.93
	Total	0.85	0.11	0.78	0.92	.70	1.00
Vegetables Preparation area	Before ISO	0.76	0.10	0.60	0.92	.66	.88
	After ISO	1.00	0.01	0.98	1.01	.98	1.00
	HACCP	0.78	0.09	0.67	0.89	.69	.92
	Total	0.84	0.13	0.76	0.92	.66	1.00
Pastry & Bakery Area	Before ISO	0.81	0.05	0.74	0.89	.75	.85
	After ISO	0.99	0.02	0.96	1.01	.97	1.00
	HACCP	0.80	0.06	0.72	0.88	.70	.86
	Total	0.86	0.10	0.80	0.92	.70	1.00
Fish area	Before ISO	0.69	0.05	0.61	0.78	.65	.77
	After ISO	0.97	0.02	0.94	1.01	.95	.99
	HACCP	0.71	0.13	0.55	0.87	.60	.93
	Total	0.79	0.15	0.70	0.88	.60	.99
Butcher Area	Before ISO	0.71	0.07	0.59	0.82	.60	.75
	After ISO	0.98	0.02	0.95	1.00	.97	1.00
	HACCP	0.72	0.10	0.60	0.84	.65	.85
	Total	0.80	0.14	0.71	0.88	.60	1.00
Pot Wash area	Before ISO	0.80	0.01	0.78	0.81	.78	.80

	After ISO	1.00	0.01	0.99	1.00	.99	1.00
	HACCP	0.79	0.04	0.74	0.84	.77	.86
	Total	0.86	0.10	0.80	0.92	.77	1.00
Dish Wash area	Before ISO	0.83	0.06	0.74	0.92	.75	.88
	After ISO	1.00	0.01	0.99	1.01	.99	1.00
	HACCP	0.76	0.04	0.71	0.82	.70	.80
	Total	0.86	0.11	0.79	0.92	.70	1.00
Main Service Bar	Before ISO	0.88	0.06	0.77	0.98	.80	.95
	After ISO	1.00	0.00	1.00	1.00	1.00	1.00
	HACCP	0.83	0.03	0.80	0.86	.80	.85
	Total	0.90	0.08	0.85	0.95	.80	1.00
Dining Areas	Before ISO	0.84	0.11	0.66	1.01	.70	.95
	After ISO	0.99	0.01	0.98	1.00	.98	.99
	HACCP	0.83	0.04	0.78	0.88	.79	.89
	Total	0.88	0.10	0.82	0.94	.70	.99
Dry store	Before ISO	0.76	0.08	0.63	0.90	.68	.88
	After ISO	0.99	0.01	0.96	1.01	.97	1.00
	HACCP	0.79	0.11	0.65	0.93	.66	.93
	Total	0.84	0.13	0.76	0.92	.66	1.00
Cold Storage Facilities	Before ISO	0.76	0.06	0.66	0.86	.70	.85
	After ISO	0.98	0.02	0.94	1.01	.96	1.00
	HACCP	0.71	0.13	0.56	0.87	.60	.92
	Total	0.81	0.14	0.72	0.90	.60	1.00
Receiving Area	Before ISO	0.79	0.10	0.62	0.95	.65	.90
	After ISO	1.00	0.01	0.99	1.01	.99	1.00
	HACCP	0.67	0.13	0.51	0.84	.55	.89
	Total	0.81	0.17	0.71	0.91	.55	1.00
Garbage Area	Before ISO	0.78	0.18	0.50	1.07	.60	1.00
	After ISO	1.00	0.01	0.98	1.01	.98	1.00
	HACCP	0.70	0.13	0.54	0.85	.56	.90
	Total	0.81	0.17	0.71	0.92	.56	1.00

Staff Toilets	Before ISO	0.72	0.16	0.46	0.97	.55	.92
	After ISO	1.00	0.01	0.99	1.01	.99	1.00
	HACCP	0.64	0.16	0.44	0.84	.55	.92
	Total	0.77	0.20	0.65	0.89	.55	1.00
Staff Cafeteria	Before ISO	0.71	0.15	0.47	0.94	.50	.84
	After ISO	0.97	0.01	0.94	0.99	.95	.98
	HACCP	0.69	0.16	0.49	0.88	.55	.93
	Total	0.78	0.17	0.67	0.88	.50	.98
Critical Practices	Before ISO	0.78	0.11	0.60	0.96	.67	.88
	After ISO	0.99	0.01	0.97	1.00	.98	1.00
	HACCP	0.74	0.10	0.61	0.87	.65	.91
	Total	0.83	0.14	0.75	0.91	.65	1.00
Summary of Audit Score	Before ISO	0.77	0.04	0.71	0.84	.73	.81
	After ISO	0.99	0.01	0.98	1.00	.98	.99
	HACCP	0.75	0.08	0.66	0.85	.68	.88
	Total	0.83	0.12	0.76	0.90	.68	.99

From the answers presented in Table (1) it is noticed that:

1. **COLD AREA**

A. Before ISO: through the measures, it is shown that the mean = 0.71, and the ranges between two values, namely 0.67 and 0.75 as a period of confidence with a standard deviation 0.03,show that the Maximum value Before ISO 0.75 and the Minimum value is .70.

B. After ISO: through the measures, it is shown that the mean = 0.98 and ranges between two values namely 0.96and 0.101 as a period of confidence with a standard deviation 0.02. Show that Maximum value Before ISO 1.00 and the Minimum value is .96.

C. HACCP: through the measures, it is shown that the mean = 0.79 and ranges between two values, namely 0.66and 0.92, as a period of confidence with a standard deviation 0.10. Show that Maximum value Before ISO 0.90 and the Minimum value is .65.

2. **SUMMARY OF AUDIT SCORE**

A. Before ISO: through the measures, it is shown that the mean = **0.77** , and the ranges between two values, namely **0.71** and **0.84** as a period of confidence with a standard deviation 0.04   ,show that the Maximum value Before ISO **.81** and the Minimum value is **.73**.

B. After ISO: through the measures, it is shown that the mean = **0.99** and ranges between two values namely **0.98** and **1.00** as a period of confidence with a standard deviation **0.01**. Show that Maximum value Before ISO **0.99** and the Minimum value is **.98**.

C. HACCP: through the measures, it is shown that the mean = **0.75** and ranges between two values, namely **0.66** and **0.85**, as a period of confidence with a standard deviation 0.08. Show that Maximum value Before ISO **.88** and the Minimum value is **.68**.

[2] COMPARISON BETWEEN BEFORE ISO , AFTER ISO AND HACCP OF SUMMARY OF AUDIT SCORE

The purpose of this comparison is to determine if there is a significant difference between Before ISO, After ISO and HACCP of Summary of Audit Score

Table (2) a summary of the LSD test between Before ISO, After ISO and HACCP of Summary of Audit Score

Dependent Variable	(I) X	(J) X	Mean Difference (I-J)	p-value	Notice
Cold Area	Before ISO	After ISO	-.27000*	.000	disagreement
		HACCP	-.07750	.114	agreement
	After ISO	Before ISO	.27000*	.000	disagreement
		HACCP	.19250*	.002	disagreement
	HACCP	Before ISO	.07750	.114	agreement
		After ISO	-.19250*	.002	disagreement
Hot Area	Before ISO	After ISO	-.18500*	.003	disagreement
		HACCP	.00700	.878	agreement
	After ISO	Before ISO	.18500*	.003	disagreement
		HACCP	.19200*	.001	disagreement
	HACCP	Before ISO	-.00700	.878	agreement
		After ISO	-.19200*	.001	disagreement
Vegetables Preparation area	Before ISO	After ISO	-.23500*	.002	disagreement
		HACCP	-.02200	.680	agreement
	After ISO	Before ISO	.23500*	.002	disagreement
		HACCP	.21300*	.002	disagreement

	HACCP	Before ISO	.02200	.680	agreement
		After ISO	-.21300*	.002	disagreement
Pastry & Bakery Area	Before ISO	After ISO	-.17500*	.000	disagreement
		HACCP	.01050	.754	agreement
	After ISO	Before ISO	.17500*	.000	disagreement
		HACCP	.18550*	.000	disagreement
	HACCP	Before ISO	-.01050	.754	agreement
		After ISO	-.18550*	.000	disagreement
Fish area	Before ISO	After ISO	-.28000*	.001	disagreement
		HACCP	-.02150	.723	agreement
	After ISO	Before ISO	.28000*	.001	disagreement
		HACCP	.25850*	.001	disagreement
	HACCP	Before ISO	.02150	.723	agreement
		After ISO	-.25850*	.001	disagreement
Butcher Area	Before ISO	After ISO	-.27000*	.000	disagreement
		HACCP	-.01250	.806	agreement
	After ISO	Before ISO	.27000*	.000	disagreement
		HACCP	.25750*	.000	disagreement
	HACCP	Before ISO	.01250	.806	agreement
		After ISO	-.25750*	.000	disagreement
Pot Wash area	Before ISO	After ISO	-.20000*	.000	disagreement
		HACCP	.00300	.864	agreement
	After ISO	Before ISO	.20000*	.000	disagreement
		HACCP	.20300*	.000	disagreement
	HACCP	Before ISO	-.00300	.864	agreement
		After ISO	-.20300*	.000	disagreement
Dish Wash area	Before ISO	After ISO	-.16500*	.000	disagreement
		HACCP	.06850*	.033	agreement
	After ISO	Before ISO	.16500*	.000	disagreement

		HACCP	.23350*	.000	disagreement
	HACCP	Before ISO	-.06850*	.033	agreement
		After ISO	-.23350*	.000	disagreement
Main Service Bar	Before ISO	After ISO	-.12500*	.001	disagreement
		HACCP	.04500	.119	agreement
	After ISO	Before ISO	.12500*	.001	disagreement
		HACCP	.17000*	.000	disagreement
	HACCP	Before ISO	-.04500	.119	agreement
		After ISO	-.17000*	.000	disagreement
Dining Areas	Before ISO	After ISO	-.15250*	.008	disagreement
		HACCP	.00500	.911	agreement
	After ISO	Before ISO	.15250*	.008	disagreement
		HACCP	.15750*	.005	disagreement
	HACCP	Before ISO	-.00500	.911	agreement
		After ISO	-.15750*	.005	disagreement
Dry store	Before ISO	After ISO	-.22250*	.004	disagreement
		HACCP	-.02350	.691	agreement
	After ISO	Before ISO	.22250*	.004	disagreement
		HACCP	.19900*	.006	disagreement
	HACCP	Before ISO	.02350	.691	agreement
		After ISO	-.19900*	.006	disagreement
Cold Storage Facilities	Before ISO	After ISO	-.21250*	.007	disagreement
		HACCP	.04850	.432	agreement
	After ISO	Before ISO	.21250*	.007	disagreement
		HACCP	.26100*	.001	disagreement
	HACCP	Before ISO	-.04850	.432	agreement
		After ISO	-.26100*	.001	disagreement
Receiving Area	Before ISO	After ISO	-.21250*	.014	disagreement
		HACCP	.11100	.132	agreement

	After ISO	Before ISO	.21250[*]	.014	disagreement
		HACCP	.32350[*]	.001	disagreement
	HACCP	Before ISO	-.11100	.132	agreement
		After ISO	-.32350[*]	.001	disagreement
Garbage Area	Before ISO	After ISO	-.21250[*]	.038	disagreement
		HACCP	.08650	.330	agreement
	After ISO	Before ISO	.21250[*]	.038	disagreement
		HACCP	.29900[*]	.005	disagreement
	HACCP	Before ISO	-.08650	.330	agreement
		After ISO	-.29900[*]	.005	disagreement
Staff Toilets	Before ISO	After ISO	-.28250[*]	.014	disagreement
		HACCP	.07300	.435	agreement
	After ISO	Before ISO	.28250[*]	.014	disagreement
		HACCP	.35550[*]	.003	disagreement
	HACCP	Before ISO	-.07300	.435	agreement
		After ISO	-.35550[*]	.003	disagreement
Staff Cafeteria	Before ISO	After ISO	-.26000[*]	.016	disagreement
		HACCP	.01900	.829	agreement
	After ISO	Before ISO	.26000[*]	.016	disagreement
		HACCP	.27900[*]	.009	disagreement
	HACCP	Before ISO	-.01900	.829	agreement
		After ISO	-.27900[*]	.009	disagreement
Critical Practices	Before ISO	After ISO	-.20500[*]	.009	disagreement
		HACCP	.04250	.495	agreement
	After ISO	Before ISO	.20500[*]	.009	disagreement
		HACCP	.24750[*]	.002	disagreement
	HACCP	Before ISO	-.04250	.495	agreement
		After ISO	-.24750[*]	.002	disagreement
Summary of	Before	After ISO	-.21750[*]	.000	disagreement

Audit Score	ISO	HACCP	.01800	.623	agreement
	After ISO	Before ISO	.21750*	.000	disagreement
		HACCP	.23550*	.000	disagreement
	HACCP	Before ISO	-.01800	.623	agreement
		After ISO	-.23550*	.000	disagreement

* = Highly significant at P≤ 0.05

It can be noticed from the data tabulated in Table (2) that the LSD test revealed insignificant difference between Before ISO and HACCP where the p-value is greater than 0.05, which means that there is **an agreement** with the values. On the other hand, the test revealed a statistically significant difference between After ISO and (Before ISO and HACCP) - p-value is less than 0.05 - which means that there is **a disagreement** between After ISO and (Before ISO and HACCP).

CONCLUSION AND IMPLICATIONS

Food preparation for hotels is a crucial part of getting food ready for sale. One of the major responsibilities of the head chef is to consistently ensure food safety. In order to analyses how well HACCP or ISO 22000 as a food safety management program which is being applied and implemented, this study will conduct a hygiene audit of the food production areas in four- and five-star hotels in Sharm El Sheikh.

The adoption of Food Safety Management in the hotel sector in accordance with ISO 22000 allows for the control of various risks to patrons' health. The ISO 22000 standard is what unifies HACCP principles and management methods. It ensures consumers, retailers, and distributors of food safety. Additionally, it outlines crucial conditions that must be met to guarantee food safety at all times.

Hotels that use ISO 22000 as their present food safety system perform better than those that use HACCP, as the HACCP system in hotels does not adopt a structured management commitment that would better serve the staff and enhance food safety management. In hotels that adopt HACCP, there is a critical requirement to put in place a training programme that emphasizes food safety.

This was in line with the use of ISO 22000 with HACCP to identify CCPs, making the HACCP system implementation straightforward, efficient, and controllable because fewer CCPs were collected. It was determined that management commitment is a crucial element in hotels using the ISO

22000 standard (Food safety management system) (Wahyono & Utami, 2018).The goal of the ISO 22000 standard is to increase the effectiveness of food safety management by implementing a more condensed food safety management system (Tessema et al., 2014). In hotel kitchens using HACCP and ISO 22000, there were obvious discrepancies in the food safety protocols.

The results can be summarized as follows: (1) ISO 22000 in hotels implemented effectively much better than the HACCP in hotels that were investigated; (2) There were statistically significant differences between HACCP and ISO 22000 in hotels in planning, establishing, and implementing auditing, and improvement of food safety management programs.; (3) Internal and external audits contribute to the effective implementation of HACCP or ISO 22000; (4)In hotels that apply ISO 22000 should extend the role of the team leader in charge of food safety to include greater communication with management regarding ongoing issues with training, system implementation, and upgrades. The study's conclusions may help auditors of food firms be more thorough when determining whether the related characteristics of the FSMS are met and satisfied. The results of audits in food production including other categories than hotels that use food safety management programmes may also be examined in similar studies that are encouraged by the findings of this one.

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