

Evaluating FSMS-Based Food Safety Audits and Good Hygiene Practices in the UAE's Hospitality Industry: A Systematic Literature Review

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Abstract

Background: Food safety is a critical global concern, particularly in the hospitality industry, where large-scale food handling increased the risk of foodborne illnesses. FSMS-based audits and Good Hygiene Practices (GHPs) played a key role in ensuring food safety. The objective of this study was to assess the effectiveness of these food safety practices in the UAE's hospitality sector and identify the challenges faced in their consistent implementation. Despite the presence of regulatory bodies and certification bodies, the implementation of FSMS and GHPs in the UAE remained a challenge.

Methodology: This study employed a systematic literature review (SLR) to analyze empirical studies published between 2018 and 2026. Data was collected from academic databases like Google Scholar, Web of Science, and Scopus using keywords related to FSMS, GHPs, and food safety compliance in the UAE's hospitality industry.

Results: The review found that FSMS audits and inspections improved compliance, but challenges such as inconsistent implementation, inadequate staff training, and limited technological integration persisted.

Conclusion: This study emphasized the need for better staff training, stronger enforcement, and the integration of digital tools to improve FSMS and GHP practices, which contributed to improved food safety and industry compliance in the UAE.

Keywords: FSMS, Food Safety Audits, Good Hygiene Practices (GHPs), Hospitality Industry, UAE, Compliance, Food Safety Management Systems, Foodborne Illness Prevention, Regulatory Compliance, Audit Effectiveness.

1 Introduction

Food safety is a critical international concern because it greatly impacts the health of the population, consumer confidence, and the economy (Tibebu et al., 2024). The World Health Organization (WHO) estimates that between 600 million individuals across the globe are sickened by contaminated food every year and that 420,000 die from foodborne diseases (Almaary, 2023). This reiterates the importance of strong food safety management practices in the world. The risk of foodborne diseases is also especially salient in the hospitality industry because of the magnitude of food operations and contact with diverse groups of people (Kim et al., 2022). The role of food safety audit and inspection, which is undertaken by different regulatory and certification bodies, has been instrumental in increasing food safety standards. Food Safety Management Systems (FSMS) and Good Hygiene Practices (GHPs) have played a major role in ensuring that rigorous food safety is adhered to throughout food service operations (Surono, 2024).

The hospitality industry in the UAE has been experiencing

stunning development due to the presence of a flourishing tourism industry and a booming restaurant market (Kumar et al., 2026). In 2021, the industry added a value to the economy based on tourism, which stood at AED 42.1 billion, and food service activities are expected to increase with a growth percentage of 7.7 per year (Shaikh Tanveer et al., 2021). Such a high rate of growth by food safety has been put on priority. Regular audits by certification bodies, regular inspection by regulatory bodies, such as Dubai Municipality and Abu Dhabi Food Control Authority, have played an important role in maintaining high standards of food safety (Al Busaidi et al., 2025). These audits have played a major role in food safety compliance improvement in the sector as well as the implementation of Food Safety Management Systems (FSMS) and Good Hygiene Practices (GHPs), as these audits, combined with these two control strategies, have greatly assisted in ensuring that food establishments comply with the strict food safety regulations in operation in the area (Maiberger & Sunmola, 2023).

The existing studies in UAE hospitality sector have been

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inclined towards individual hotels or restaurants and in most cases it does not give a complete picture of the food safety audits and its role in maintaining food safety at large. Though Food Safety Management Systems (FSMS), Good Hygiene Practices (GHPs) and audits are viewed as the most effective instruments to improve the adherence to food safety standards, the potential of their integration in a specific regulatory setting of the UAE has not been studied in detail yet (Maiberger & Sunmola, 2023). This study addressed this gap by exploring the effectiveness of FSMS implementation, food safety audits, and inspections in the hospitality sector. It measured the benefits of these systems in enhancing compliance, culture of food safety, and minimization of risks related to foodborne illness in the UAE.

Although the audit has been considered as a tool for compliance, the combination of FSMS and Good Hygiene Practices (GHPs) has contributed greatly to the improvement of food safety standards in the country. The study aimed to bring empirical evidence on the effectiveness of these audits and systems in enhancing food safety in various hospitality organizations in the UAE, as a reminder of the general advances towards food safety management. This study seeks to answer the following research questions:

RQ1: What food safety audits and Good Hygiene Practices (GHPs) are reported in hospitality studies in the UAE?

RQ2: What is the compliance status across audited entities in the UAE hospitality sector?

RQ3: What challenges do institutions face in implementing food safety management systems and good hygiene practices?

RQ4: Are audit outcomes improving over time?

The study is significant as it provides valuable data on how food safety audits and inspections in Food Safety Management Systems (FSMS) have a beneficial effect on the hospitality industry in the UAE. It gives policy-makers, food safety auditors, and hospitality managers an idea of how they can make food safety measures tighter by identifying the compliance trends and hurdles, thereby contributing to the better health of the people and establishing standards in the industry.

2 Methodology

2.1 Study Design

This study employed a systematic literature review (SLR) paradigm, which was a powerful and valid methodology of integrating the existing research evidence. Systematic reviews are unbiased and include a summary

of the literature on a given subject in a systematic and transparent manner (Sataloff et al., 2021). The reason behind the selection of the SLR approach was that it reduces bias and generates reliable and repeatable results. The selection, review, and synthesis of the studies were done in a well-defined process that provides a clear and exhaustive overview of the food safety audits, Food Safety Management Systems (FSMS), and Good Hygiene Practices (GHPs) in the UAE hospitality industry. The review also mentioned that these audits on systems have a positive effect on improving food safety practices and compliance, and do not only address challenges.

2.2 Search Strategy

The search strategy was aimed at finding out the appropriate empirical studies on food safety audit, Food Safety Management Systems (FSMS), and Good Hygiene Practices (GHPs) in the hospitality industry of the UAE. To find a wide selection of research articles, the most important academic databases, such as Google Scholar, Web of Science, and Scopus, were used (Martín-Martín et al., 2021). The search was done using such keywords as food safety, food safety audits, Food Safety Management Systems (FSMS), hospitality UAE, and food safety compliance. Articles published not earlier than 2018 and later than 2025 and written in English were selected as they would be relevant to the existing food safety practices in the UAE hospitality industry (see Table 1).

2.3 Inclusion and Exclusion Criteria

Empirical and peer-reviewed publications concerning food safety audits, Food Safety Management Systems (FSMS), and Good Hygiene Practices (GHPs) in the hospitality industry (hotels, restaurants) in the UAE or the GCC region were taken as inclusion criteria. The exclusion criteria eliminated opinion articles, blogs, and non-peer-reviewed and empirically based research. Articles not in the hospitality industry or not dealing with food safety audit, FSMS, or GHPs were also omitted. To ensure clarity and relevance, redundant research was eliminated, and the review was narrowed down to food safety operations in the hospitality industry of the UAE (see Table 2).

2.4 Study Selection Process

Studies were selected in a systematic manner using a filtering process. First, all the studies found were screened by titles and abstracts to determine their relevance

Table 1: Search Strategy

Criteria	Details
Databases	Google Scholar, Web of Science, Scopus
Keywords	“Food safety audits,” “Food Safety Management Systems (FSMS),” “Good Hygiene Practices (GHPs),” “hospitality UAE,” “food safety compliance”
Search Period	Studies published between 2018 and 2025
Language	English
Scope	Focus on empirical studies related to food safety audits, FSMS, and GHPs in the UAE's hospitality industry.
Relevance	Only studies directly addressing food safety audits, FSMS, and GHPs within the UAE hospitality sector.

Table 2: Inclusion and Exclusion Criteria

Criteria	Inclusion Criteria	Exclusion Criteria
Study Type	Peer-reviewed journal articles, conference papers, and empirical reports.	Non-peer-reviewed opinion pieces, blogs, and articles lack empirical data.
Focus	Studies focusing on food safety audits, Food Safety Management Systems (FSMS), and Good Hygiene Practices (GHPs) in the hospitality context (hotels, restaurants).	Studies outside the hospitality sector or those not mentioning food safety audits, FSMS, or GHPs.
Geographic Scope	Studies from the UAE or GCC region, or those with direct implications for food safety practices in the UAE.	Studies unrelated to the UAE or GCC region, or without direct relevance to UAE food safety practices.
Content	Empirical studies directly related to food safety audits, FSMS, and GHPs in hospitality.	Non-empirical studies or those that do not discuss food safety audits, FSMS, or GHPs.
Duplicates	No duplicates will be included in the review to preserve distinct insights.	Duplicate studies will be excluded to ensure clarity and prevent redundancy.

to the research questions. Only those that fit the inclusion criteria or those whose relevance to the abstract is not clear were considered further by means of a complete-text review. The studies were included according to their relevance to the research topic, which consisted of food safety audits, Food Safety Management System (FSMS), and Good Hygiene Practices (GHPs) in the hospitality sector in the UAE. The exclusion criteria were well spelled out to provide transparency in the selection process. The PRISMA flowchart was used to document this process, and best practices were followed in the systematic review methodology.

2.5 Data Extraction

The criteria used to extract the data were the key characteristics of the studies and their outcomes based

on the research questions. The data obtained through the extraction of the information on each study consisted of the following: author(s), year of publication, country of study, study design, sample size, sector (hospitality case), type of audit, Food Safety Management Systems (FSMS) practice, Good Hygiene Practices (GHPs) reviewed, and compliance measures. Some other significant results, like the problems of hospitality institutions and the outcomes of food safety audits, were also documented.

2.6 Quality Assessment

Qualitative assessment of the rigour of the studies was carried out to determine the methodological rigour of the studies included. To make sure every study would be of high standard as far as transparency and methodological quality were concerned, the PRISMA (Preferred Reporting

Items to Systematic Reviews and Meta-Analyses) checklist (27 items) was used. The application of these tools guaranteed that the quality of the research that is incorporated in the review was established by quality and reliable evidence, such that the results that are obtained through the review can be explained by quality data. This enhanced the credibility and validity of the study's conclusions in totality.

2.7 PRISMA Analysis

The flowchart (Figure 1) is the scientific procedure of choosing the study in a literature review. First, databases

were searched to identify 746 studies. Duplicates, ineligible records, and records that had been removed were 256, 35, respectively, and 15 other reasons, which left 440 records to be screened. The screening stage was followed by excluding 200 records, and a total of 240 studies were retrieved. Following retrieval, 127 reports were not available, and 113 reports were evaluated in terms of eligibility. Finally, 26 papers were involved in the review. Reasons why exclusions were done at this stage were because of the methodological issues (45 studies), lack of relevance (36 studies), and other reasons that could not be specified (10 studies).

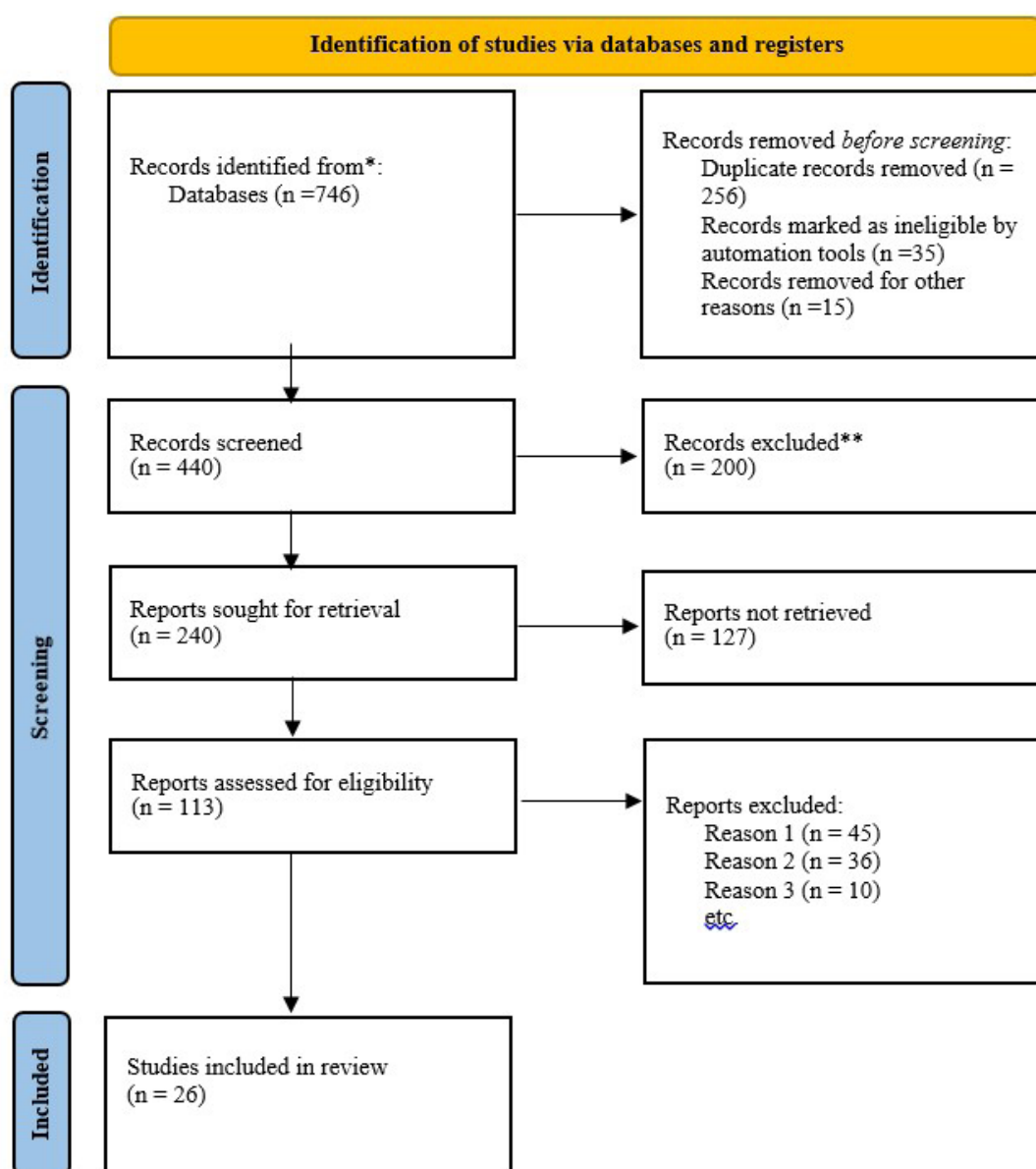


Figure 1: PRISMA Flow Chart

Table 3: Summary of Identified Literature

S. No	Authors (Year)	Title	Journal	Country / Region	Sector	Audit / CCP Focus	Key Findings
1	(Taha et al., 2025)	Fostering food safety culture in restaurants in the United Arab Emirates (UAE): Leadership impact on food handlers' commitment and compliance	Journal of Food Protection	UAE (Dubai)	Restaurants	Leadership & FSMS	Transformational leadership style significantly predicts food handler commitment to safety.
2	(A. Ali et al., 2026)	Assessing Food Safety Compliance: Pre/Post FSMS Certification	Applied Sciences	India	Food manufacturing	FSMS audit	ISO 22000 + FSVP audit improved compliance by ~97%. (PMC)
3	(Sadeh & Abu Hijleh, 2024)	Investigating the Food Waste Status in the Hospitality Sector of the Emirate of Dubai, UAE	Springer Nature	UAE (Dubai)	Hospitality	Digital + FSMS	Digital waste-management apps, combined with FSMS, decrease waste and increase efficiency.
4	(Crocker, 2025)	A Comprehensive Review of Food Waste Management Strategies in the Food Service Industry	AHTSI Book Series	Global	Food Service	Waste & Compliance	Links effective CCP monitoring to overall reduction in food spoilage and operational waste.
5	(Kumar et al., 2024)	Enhancing Food Sustainability Through Technological Innovation: A Paradigmatic Approach to Minimizing Household Food Wastage via an AI-Enabled Application	IEEE ASET	UAE (Dubai)	Households	AI Monitoring	AI-enabled apps can significantly minimize food waste by improving safety awareness.
6	(Anwar Ali et al., 2026)	Food Safety in the Catering Sector: Nonconformities, Challenges & Hygiene	PMC	Global	Catering	Hygiene & GHP issues	Identified hygiene, sanitation, waste, and temperature control gaps in catering. (PMC)
7	(Silva et al., 2021)	Burnout and food safety: Understanding the role of job satisfaction and menu complexity in foodservice	IJHM	Global	Food Service	Psychology	Menu complexity and burnout levels negatively correlate with safety compliance.
8	(Taha et al., 2020)	Structural modelling of relationships between food safety knowledge, attitude, commitment, and behavior of food handlers in restaurants in Jebel Ali Free Zone, Dubai, UAE	Food Control	UAE (Dubai)	Restaurants	FSMS Model	Knowledge alone does not disrupt behavior; organizational commitment is required.
9	(Raihanah & Norazmir, 2021)	A Systematic Review on HACCP in Southeast Asia Countries	Indian J. of Public Health Research & Development	Southeast Asia	Food industry	HACCP compliance trends	Found uneven compliance; training and enforcement are critical for consistency.

Cont. Table 3

S. No	Authors (Year)	Title	Journal	Country / Region	Sector	Audit / CCP Focus	Key Findings
10	(Pinto et al., 2019)	COMPLIANCE STUDY OF HAZARD ANALYSIS AND CRITICAL CONTROL POINT SYSTEM	Big Data Analytics Conf.	Portugal	Food inspection	FSMS compliance data	Non-compliance rates 30–37%; highlights need for improved enforcement.
11	(Zarid, 2025)	The Green HACCP Approach: Advancing Food Safety and Sustainability	Sustainability	Global	Multi-sector	Green HACCP model	Integration of sustainability metrics enhanced compliance & efficiency.
12	(Vaughan, 2018)	A Case Study of Food Safety Good Agricultural Practices Certification with HACCP-Level Procedures for Small-Scale Produce Processors and Packers	Int. J. of Business	USA	Agriculture/packaging	HACCP-level GAP audits	HACCP certification improved compliance, quality, and market readiness.
13	(Azanza & Madriaga, 2021)	Halal-HACCP Food Safety Competency Development for the 2019 SEA Games	Philippine J. of Science	Philippines	Hospitality/events	HACCP audit training	Training improved HACCP awareness and compliance during mass events.
14	(Nair et al., 2023)	Assessing Food Safety Compliance in a Small-Scale Indian Food Manufacturer: Before and after Certification of the Food Safety Management System and Foreign Supplier Verification Program	Applied Sciences	India	Food manufacturing	ISO 22000 & HACCP audits	Certification improved HACCP conformity by 97%; fewer violations post-audit.
15	(Wandolo, 2019)	Awareness on Hazard Analysis and Critical Control Points (HACCP) Principles in TVET and University Hospitality Schools in Kenya	Int. J. of Scientific Research & Management	Kenya	Hospitality education	HACCP awareness	83% awareness but poor practice; ongoing training needed.
16	(Chourasia, 2025)	The Role of HACCP-Based Hygiene Management in Safeguarding Paediatric Health in the Global Hospitality Supply Chain	Metallurgical & Materials Engineering	Global	Hospitality	HACCP and hygiene audits	HACCP reduced pediatric foodborne risks; gaps in implementation persist.
17	(Onesmus et al., 2020)	Effects of hazard analysis and critical control points principles on food safety at the national youth service in Nakuru County, Kenya.	Int. J. of Research in Business & Social Science	Kenya	Institutional catering	FSMS audit impact	HACCP accounted for a 16.6% improvement in food safety outcomes.
18	(Lateefat et al., 2018)	Hazard Analysis Critical Control Point (Haccp) Assessment of Regulated Premises: An Assessment of Standard Hotels in Ilorin Metropolis	J. of Hospitality & Environmental Research	Nigeria	Hospitality	Hotel HACCP audits	95% hotels are non-compliant; there is a lack of HACCP understanding among staff.

Cont. Table 3

S. No	Authors (Year)	Title	Journal	Country / Region	Sector	Audit / CCP Focus	Key Findings
19	(De Boeck et al., 2019)	Method triangulation to assess different aspects of food safety culture in food service operations.	Food Research International	Belgium	Catering/ university dining	Internal audits & CCP monitoring	Triangulation of audits and surveys improved HACCP reliability.
20	(Marvie & Putri, 2023)	Evaluasi cara produksi pangan yang baik (CPPB) dan rekomendasi hazard analytical critical control point (HACCP) pada UKM teh sereh di Metro, Lampung	Agrointek Journal	Indonesia	SME Food Processing	HACCP plan evaluation	Identified 3 CCPs; recommended hygiene and audit improvements.
21	(Sariq, 2025)	The Effectiveness of HACCP and FSMS in Enhancing Food Safety in the Meat Industry	IJRASET	Global	Meat industry	HACCP + ISO 22000	Reduced contamination and improved traceability; training essential.
22	(Panghal et al., 2018))	Role of Food Safety Management Systems in safe food production: A review	Journal of Food Safety	Global	Food supply chain	FSMS & HACCP integration	ISO 22000 improved HACCP audit standardization.
23	(Okpala & Korzeniowska, 2021)	Understanding the Relevance of Quality Management in Agro-food Product Industry: From Ethical Considerations to Assuring Food Hygiene Quality Safety Standards and Its Associated Processes	Food Reviews International	Global	Agro-food	HACCP + QA integration	Combining QA and HACCP improved hygiene and audit consistency.
24	(Yunancy et al., 2020)	HAZARD ANALYSIS CRITICAL CONTROL POINT (HACCP) ON PALUMARA FISH SOUP IN THE NUTRITION INSTALLATION OF THE REGIONAL GENERAL HOSPITAL, INDONESIA	Public Health of Indonesia	Indonesia	Health-care catering	HACCP design and risks	Identified CCPs during preparation; lack of GMP implementation.
25	(Allam et al., 2023)	Assistance Needed for Increasing Knowledge of HACCP Food Safety Principles for the Organic Sector in Selected EU Countries	Sustainability	Europe (EU)	Organic food	HACCP training needs	Found low HACCP understanding; training materials needed.
26	(Vitkova, 2022)	Medical Review and Analysis of Canned Food Production Safety		Bulgaria	Food processing	HACCP plan audit	Audit algorithm improved hazard identification & verification.

3 Results

Table 3 provides a summary of 26 studies concerning the HACCP-based food safety audits and Critical Control Point (CCP) practices in different sectors and in different territories. The topics studied are quite

extensive, involving the influence of leadership on the food safety culture, HACCP implementation with risk management, the application of digital tools in waste management, HACCP training, and compliance in the hospitality sector, as well as food processing, agriculture,

and healthcare.

4 Discussions

4.1 FSMS-Based Audits and GHP Practices Reported in Hospitality Studies

FSMS-Based Audits and GHP Practices Reported in Hospitality Studies. The audits on Good Hygiene Practices (GHPs) based on FSMS have become critical in evaluating food safety in most industries, especially the hospitality industry. A variety of research has been conducted regarding the integration of FSMS systems into the hospitality industry, with the emphasis on compliance, approaches in terms of auditing, and the implementation of GHPs.

As it was stated in the research by Taha et al. (2025), leadership is of great importance in enhancing the food safety culture in UAE restaurants (Taha et al., 2025). Their research pointed out the significance of using transformational leadership in enhancing food handler commitment to safety, which in turn led to the effectiveness of the FSMS audits and inspections. In addition, Taha et al. (2020) investigated the relationship between attitudes and food safety knowledge with the intention to follow FSMS principles among food handlers. They found that the effective implementation of FSMS depended on the participation of the workers and the determination of the organization towards food safety practices (Taha et al., 2020).

Comparing it to the international studies, such as the one by Panghal et al. (2018), that suggested the use of risk management systems alongside the FSMS (applying Ishikawa diagrams), UAE-based studies were mainly devoted to the leadership and compliance monitoring in hospitality facilities (Panghal et al., 2018)). However, while UAE-based audits are also risk-based, they are not as advanced in utilizing sophisticated risk management tools as their international counterparts. Nevertheless, even in this case, they help to strengthen the overall FSMS framework, detecting possible risks and ensuring food safety.

Additionally, Sadeh and Abu Hijleh (2024) investigated the application of digital tools in conjunction with the FSMS in the hospitality sector of the UAE. They revealed that the digital food safety platform (food watch) was management application in combination with FSMS audits, were effective in minimising food waste and enhancing food safety standards (Sadeh & Abu Hijleh, 2024).

4.2 Compliance Status across Audited Entities

The degree of compliance in audited organizations in the hospitality industry in the UAE was extremely different, as various studies have reported mixed outcomes when it comes to the application of FSMS and GHPs. Taha et al. (2020) emphasized that the rates of compliance varied among the establishments despite the intensive food safety training in Dubai. Certain facilities were doing a very good job, yet the implementation of the standards in FSMS was inconsistent (Taha et al., 2020). Panghal et al. (2018) came to the conclusion that knowledge by itself was not enough to change behavior and that organizational commitment was an important factor in the accomplishment of compliance (Panghal et al., 2018). This was consistent with other researchers who tested the same, including Lateefat et al. (2018), who reported that 95% of hotels in Ilorin Metropolis, Nigeria, failed to address food safety management standards, indicating that there was no adequate staff awareness and usage of FSMS and GHPs (Lateefat et al., 2018).

In the UAE, food safety has been improved, and regulatory authorities, including Dubai Municipality, Abu Dhabi Food Control Authority, and municipalities of Northern Emirates, including Ajman, Sharjah, Ras Al Khaimah, and Umm Al Quwain, are instrumental in the regulation of food safety. According to Taha et al. (2025), most restaurants in Dubai were also switching to FSMS standards. Nonetheless, some difficulties, like employee turnover and negligence in the implementation of GHPs, continued to affect complete adherence (Taha et al., 2025). According to Pinto et al. (2019), non-compliance rates in food establishments were also 30-37, indicating the worldwide difficulties in the management of food safety, including in the UAE (Pinto et al., 2019).

The results of the research by Raihanah and Norazmir (2021) and other researchers in international studies revealed that training, enforcement, and frequent audits were instrumental in enhancing FSMS compliance in different sectors (Raihanah & Norazmir, 2021). These results were in line with the difficulties experienced in the UAE, where constant monitoring and training of staff were cited as major barriers to enhancing compliance. Also, as Chourasia (2025) observed, FSMS audits may be effective to reduce the risks of foodborne illnesses; however, the cultural differences, regulatory variations, and dynamic nature of food safety standards have led to the existing gaps in the full implementation of FSMS (Chourasia, 2025).

4.3 Challenges Faced by Institutions in Implementing FSMS Practices

Implementation of FSMS and Good Hygiene Practices (GHPs) in the hospitality industry is associated with many challenges, especially in a multicultural and diverse market such as the UAE. Lateefat et al. (2018) indicate that one of the main problems in executing the FSMS practices is the lack of knowledge of the hospitality staff about the principles of food safety management (Lateefat et al., 2018). Their research determined that 95 percent of hotels in Ilorin Metropolis in Nigeria were not using FSMS because of a lack of understanding of the system. In the same way, Allam et al. (2023) determined that the FSMS implementation in the UAE was complicated because of the lack of staff training and a deficiency of awareness about food safety procedures, despite the FSMS audits (Allam et al., 2023).

The other issue is high turnover of food safety employees in hospitality premises. Taha et al. (2025) noted that high rate of employee turnover was one of the factors that lead to inconsistency in FSMS implementation in Dubai restaurants. Although food safety practices are required, the delays during training occur depending on a number of factors. As an example, new employees might not be trained as soon as they join, and it can take them, up to two or three months, before being trained due to financial or technical reasons, including problems with digital platforms or administrative challenges in the municipality (Taha et al., 2025). The result of this delay in training is a contributor to the disparities in the food safety implementation, which poses a potential risk to the foodborne illnesses. In addition, hospitality business is highly dynamic and it is quite difficult to establish unified food safety procedures among all employees.

According to the research conducted by Pinto et al. (2019) and other studies on the subject conducted by the international community, the integration of risk management systems and FSMS audit would improve the implementation of GHP, but it would also pose certain complications (Pinto et al., 2019). The complexity is facilitated by the fact that more than one supplier is involved and it is difficult to monitor and control the FSMS practices at all the points of the entire supply chain. To achieve successful food safety management at all levels, this complexity is necessary to be handled.

Moreover, Sadeh and Abu Hijleh (2024) indicated that there was an increased relevance of digital solutions in tracking FSMS. Although Dubai has already introduced

digitalization, and the application of platforms like Foodwatch or DM Checked allows to see the current state in real-time, the system needs to be improved considerably. The platform has shown great potential in deploying FSMS, with opportunities for further enhancement, particularly in terms of user adoption and usability. By incorporating more user-friendly features and improvements, the system has the potential to become even more effective (Sadeh & Abu Hijleh, 2024). It is pertinent to mention that despite the fact that Dubai has embraced the concept of digitalization, other Emirates have not embraced the same digital platforms. The application of AI and automation in the food safety management process is expanding, and the events of creating the digitalization of the whole procedure may become a reality with continued advancement of the current systems.

4.4 Improvement of Audit Outcomes over Time

The current enhancements in audit reports over time are a good measure that FSMS-based audits on Good Hygiene Practices (GHPs) in the hospitality industry are effective. It has been noted that even though there have been improvements in audit results in the UAE, there have been uneven improvements in various establishments.

De Boeck et al. (2019) have discovered that FSMS audit is now more common in restaurants in Dubai, and there is a gradual improvement in food safety practices. These studies indicated that the outcomes of the audits got better as time went by, especially in those organisations with good leadership and an established food safety culture (De Boeck et al., 2019). But in the other establishments, the audit performance did not improve and in fact deteriorated owing to the lack of training of the staff and irregular application of GHPs.

International studies supported the trend witnessed in the UAE. It was observed by Panghal et al. (2018) that non-conformities in FSMS audit continued to be low, and the non-compliance rates were 30-37%. This shows that although some positive changes are brought about by audits, there is a need to enforce them consistently and also train continuously in order to realise significant changes (Panghal et al., 2018). The research by Pinto highlighted that both follow-up audits and ongoing training are important in improving food safety compliance in the long run.

Likewise, studies by Chourasia (2025) and Raihanah and Norazmir (2021) also showed that FSMS audits might be an effective way to increase food safety compliance in

the long term, but maintenance of improvement requires regular audits and continuous monitoring (Chourasia, 2025; Raihanah & Norazmir, 2021). Moreover, the study by Nair et al. (2023) proved that receiving food safety certification (like ISO 22000) resulted in a tremendous growth in the number of audit outcomes and compliance rates up to 97% after certification. This demonstrates the fact that the combination of FSMS and certification can significantly increase the food safety level throughout the hospitality industry (Nair et al., 2023).

5 Conclusion

In conclusion, it can be affirmed that FSMS-based audits and Good Hygiene Practices (GHPs) play an important role in promoting food safety compliance in the UAE hospitality sector. Despite the improvement that has been made, issues like lack of consistency in training, staff turnover, and poor technological integration still exist. The results indicate, however, that FSMS audits on GHPs have brought significant results over the years, particularly when there is strong leadership and continuous training. Further implementation of the digital tools, frequent follow-up audits, and regular education of the staff should be included in the future work because only in this way can the food safety standards be preserved and improved faster.

6 Limitations and Future Recommendations

This research study is limited in a number of ways. To begin with, the review was limited to the studies that have been published in English, and this might have omitted other studies published in other languages. Secondly, the only empirical studies that were taken were those dating to 2018 and onwards, which may deprive them of older studies that can be useful. Finally, not all studies were rigorous in their methodologies or were not reported in an easily understandable manner, which could have caused bias in the results. The future studies are to be expanded into different parts of the world, especially non-English countries, and concentrate on the FSMS and GHP practices of different countries all over the world. Also, longitudinal research is required to determine the effectiveness of FSMS audits and the use of emerging technologies to control food safety.

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