

HACCP IN HOSPITALITY AND TOURISM: EVOLUTION AND INTERNATIONAL APPLICATION

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Abstract

This study examines the evolution and international application of HACCP within hospitality and tourism, focusing on how a preventive food safety framework has developed into a widely adopted operational system. The research is based on qualitative analysis of secondary data derived from peer-reviewed scientific literature, academic publications, and institutional sources accessed through established academic databases. Historical, descriptive, deductive, and comparative methods are applied to analyses the system's development, its application across different environments, and its performance under varying conditions. The findings indicate that international expansion does not result in uniform implementation. Effectiveness depends on regulatory frameworks, organizational capacity, resource availability, and operational discipline. Formal adoption alone does not ensure consistent outcomes, while integration into daily operational routines significantly enhances reliability. Differences in organizational scale, workforce structure, and regulatory oversight contribute to uneven application across hospitality systems. The study demonstrates that HACCP strengthens the credibility and stability of hospitality services by introducing structured control and predictability. Its international relevance lies in its ability to function within diverse and complex environments, where outcomes depend on consistent application rather than formal recognition alone.

Key words: *food safety systems, preventive control, risk management, regulatory frameworks, operational consistency.*

JEL Classification: **Z32, Q18**

INTRODUCTION

Food has played a role in different aspects of human culture over a very long period, even down through time far past simple biological necessity it helps us understand status, refinement, or social distinction. According to the story, in antiquity, the table served as a visible symbol for success, where plenty and quality communicated authority and cultural sophistication. Classical Greek and Roman menus demonstrate a long-standing relationship between fine dining and class, in that the display of food spoke more than the consumption of food, conveying ideas about order, discipline, and cultivated identity. Patterns like this built such habits gradually into a cultural structure in which making and distributing food as a specialized human activity, through culture, knowledge, technique, and expectation rather than subsistence, is a specialized human one.

As the mobility mode intensified and travel was included in both economy and social life, food found a new dimension related to place-based experiences. Locality came the flavor

of destination cuisine began to influence peoples, thus shaping perceptions and evaluations of places and the remembering and distinguishing it in an increasingly competitive landscape. Culinary identity has become part of hospitality services in this new phenomenon, where food's quality and its display contribute directly to whether guests believe service providers. In the light of such an approach the conditions under which food is produced, handled and served become particularly important, with any lack of safety standards not only being detrimental to individual welfare but also to the reputations of those who must depend upon them. As hospitality and tourism activities spread across national borders, there were new layers of complexity in the governance of food safety. A wide range of regulatory environments, institutional capacity and operational methods, called for a systematic approach to overcome local constraints. One of these evolving phenomena is Hazard Analysis and Critical Control Points system, which became commonly known as HACCP, which is developed as a methodology in answer to the ever-increasing requirement for systematic risk control. Instead of inspection of end products to ensure safety, this process focuses on on-going oversight from process to process, identifying potential safety hazards at every phase of food preparation and creating systems of control to prevent exposure to risk to safety. This process centric logic was a paradigm shift in food safety management philosophy, integrating operational practices with the preventive perspective.

The application of HACCP in the context of hospitality and tourism cannot be taken on in isolation from its historical evolution and globalization. Its trajectory represents a gradual evolution from sector-specific applications to a model recognized internationally, which can be applied within various institutional and cultural systems. Such systematic approaches have become an important resource in hotels, restaurants and catering where, for example, to facilitate consistency and regulation compliance, in addition to the increasing customer consciousness around hygiene and safety. In this respect, HACCP can be regarded as a nexus between regulatory compliance, managerial rigor and consumer confidence, consolidating the trust of tourism service providers in a world where information travels rapidly and reputational risks are heightened at the same pace at a global scale. The analytical interest of this study is put at the same intersection between evolution and international influence. Recognizing how HACCP grew from its core principles to become a management system has to be coupled with historical continuity and structural change. However, considering its use in hospitality and tourism requires a consideration of how common principles are interpreted, used and disseminated in various operational levels. This dual perspective would more accurately measure the capacities of the system to act as a mechanism for unifying an otherwise disconnected worldwide landscape of food service delivery, with consistency, responsibility and trust being major considerations in determining sustainability.

1. HISTORICAL DEVELOPMENT AND CONCEPTUAL FOUNDATIONS OF THE HACCP SYSTEM

The introduction of the Hazard Analysis and Critical Control Points approach is tightly tied to the current era of new high standards and increased technical and safety concerns. In the 1960s, the growth of the United States space program led to an environment in which traditional forms of food safety were no longer desirable. The environment of space flight was particularly rigorous; contamination with food had implications that could never be addressed with immediate medical attention. In such a confined space, a scientific team was confronted with methodological workable safety solutions that could avert dangers before they occurred and in doing so brought a paradigm shift from the logic of safety of food to control ahead of

time³⁰. But the transformation wasn't done in a vacuum, but through an organized partnership of public institutions with private expertise. There was a collaboration between the Pillsbury Company and the U.S. Army Natick Laboratories with the National Aeronautics and Space Administration, who was a cross-disciplinary group that bridged scientific study with the practical application in the industrial world. Drawing on this framework, they introduced a new model of control based on the systematic identification of risks integrated into the production chain process and that is, embedded in the entire production line.

All stages of the process, starting with raw material selection, to processing, packaging and distribution, were considered to identify potential sources of contamination at the point of origin. This approach to process-based control formed a methodological shift to alternative inspection protocols focused on final-product measurement³¹. At the conceptual level, introducing critical control points has been a critical point in structuring this approach. This means that, at specific stages of the technological process, hazard occurrences reach a level that calls for constant monitoring and exact action. By identifying such phases, the system makes certain control measures available that prevent the spread of biological, chemical or physical hazards. The focus on continuous observation and correction reflects a disciplined view of production is consistent with its interdependent operations, with monitoring being constantly implemented, vigilance built into each step³². The formulation of this framework was officially discussed in 1971 at the National Conference on Food Protection, a U.S. national symposium. The theme at the conference was Howard E. Bauman from Pillsbury Company, who demonstrated a presentation of the principles of hazard analysis and critical control points to industry stakeholders and regulatory authorities in an audience of industry, and regulatory authority. The case drew immediate attention to itself due to its structured solution to broken inspection practices and articulateness, offering an approach to the complexities of industrial food production³³. Institutional recognition occurred in the early 1970s, when the Food and Drug Administration adopted the principles of this approach in policy in relation to regulation of low-acid canned foods. The regulatory adoption constituted a shift from experimental implementation to formal domestication within national food safety policy. The system thus extrapolated from its original configuration by taking on a practical aspect that showed its usefulness in production settings³⁴.

The consolidation of this framework was further advanced in the 1980s through scientific endorsement. In 1985, the National Academy of Sciences proposed expanding its use as the main way to protect food safety in industrialized settings. This recommendation strengthened the credibility of this approach and helped it become diffused to regulatory and industrial contexts. Focused on prevention, rather than production verification, it aligned with increasing expectations around the accountability and control of food systems. The next 10 years were a pivotal period in the international translation of the system. Following its adoption in the Codex Alimentarius Commission, a degree of standardization was established that facilitated the international acceptance of the system. The seven principles of HACCP were articulated formally within this institution, and provided an organized scheme for the implementation of regulatory frameworks in all regulatory environments. These principles provided a common language to facilitate harmonization of food safety practices that will help

³⁰ Weinroth, M. D., Belk, A. D., & Belk, K. E. (2018). History, development, and current status of food safety systems worldwide. *Animal Frontiers*.

³¹ Ropkins, K., & Beck, A. J. (2000). Evaluation of worldwide approaches to the use of HACCP to control food safety. *Trends in Food Science & Technology*.

³² Weinroth et al., *op. cit.* 1.

³³ Ropkins & Beck, *op. cit.* 2.

³⁴ Weinroth et al., *op. cit.* 1.

both public authorities and private operators to align their operations with internationally recognized guidelines. These principles and their articulation played role in the shift of HACCP into universal model that did not restrict to individual countries, and has flexibly adopted in different areas³⁵. This model would eventually become one of the most popular ways to consider food safety in the context of an ever more closely connected world economy.

Its prophylactic nature is also most likely applicable to segments with complex supply chains and high level of consumer sensitiveness, like hospitality and tourism. As a conceptually, the incorporation of HACCP in broader management systems also is an extension of existing systems' development conceptual expansion concept, where safety is added on a par with quality control and operational homogeneity across control systems³⁶. Modern reviews reveal that the system further evolves over time to meet the ongoing technological, regulatory and market dynamics, and has not lost its importance as a comprehensive model of risk at the framework for risk management in food-related services.

2. INTERNATIONAL DIFFUSION AND OPERATIONAL APPLICATION OF HACCP IN HOSPITALITY AND TOURISM

Because of the increase of international tourism, there is a radical change in the structure and provision of hospitality service, with food safety becoming an issue critical to service delivery. The constant movement of large numbers of tourists across national borders has further intertwined destinations with hospitality facilities and global food supply networks. Such an environment creates a paradigm change where the act of preparation and service of food cannot be treated like localized operation in the field: Food preparation and service are part of a transnational movement that must be consistent with consistency, predictability, and alignment to regulations and processes to be sustainable. In light of these circumstances, HACCP developed as an approach that would allow hospitality providers to gain more organized regulation over food related risks and risk factors operating in varied and often heterogeneous atmospheres³⁷. Tourism markets' internationalization has changed the type of food offered in hotels and restaurants. It's a time for variety and diversification and that means ingredients from every continent now come to mind. Such an extended supply chain complicates things further, as goods will generally pass through multiple levels of transportation and storage before arriving at the ultimate point³⁸. It is in such an environment, in such a context as this, of course, that the lack of an organized system of monitoring leaves hospitality operations vulnerable to an increased level of uncertainty.

HACCP resolves to this problem by creating a procedural rationale, which can track potential risks of accidents among the various stages of the supply chain process, providing a structured framework that can retain control in the face of the spatial dispersion of inputs.³⁹ In the hospitality industry, implementation of HACCP is a disciplined organizational system of kitchen management of kitchen processes, all done with specific measuring criteria for all activities. Standards for storage, temperature, and handling and technique of preparation and methods are also established for the testing. This reorienting process brings the internal operation of hospitality companies into a system of traceability and control. A set of structured

³⁵ Ababio, P. F., & Lovatt, P. (2015). A review on food safety and food hygiene studies in Ghana. *Food Control*.

³⁶ Radu, E., Dima, A., Dobrota, E. M., Badea, A. M., & Madsen, D. Ø. (2023). Global trends and research hotspots on HACCP and modern quality management systems in the food industry. *Heliyon*.

³⁷ Taylor, E. (2008). *HACCP for the hospitality industry: History in the making*. *International Journal of Contemporary Hospitality Management*.

³⁸ Ibid.

³⁹ Taylor, E., & Forte, J. (2008). *HACCP: The chefs' perspective*. *International Journal of Contemporary Hospitality Management*.

procedures has been suggested to improve the staff's ability to manage hygiene or improve the food production process stability⁴⁰, and from research in hotel conditions there has been evidence to support this. The procedure brings about a form of operational clarity that cuts down on fluctuations and reinforces internal coordination.

The significance of HACCP in tourism is not only for internal process management but also is closely related to service quality perception among tourists. Food experiences play a key role in the perception of hospitality services and the overall impressions that travelers have regarding a destination. With fast flowing information shared in digital platforms, every situation which involves problems of food safety can be used to disseminate information and may undermine one's reputation of the establishment and the destination. Results show that breaches of food safety regulations may lead to instant reputational harm that may remain long after the event itself has taken place⁴¹. Consequently, hospitality companies use systems like HACCP as a means of establishing their credibility and retaining the faith of visitors. Among these, applications of HACCP are especially relevant in larger food prepared premises like hotels, conference centers, and catering services.

Such environments necessitate preparation of a substantial amount of food simultaneously and on a very small-time scale, which enhances operations inconsistencies. In such cases, well-defined procedures become necessary for uniformity in production processes. Research in mass catering operation also agrees that systematic formulation of production processes is a beneficial factor in the establishment of sanitary condition and the reliability of service provision, and is in agreement with HACCP⁴². It functions, therefore, as a means of integrating productiveness and safety. Economically, the implementation of structured food safety systems has a quantifiable effect on the competitive posture of tourism operators. Disposable market environments are higher in global mobility countries, and as a result, destinations have a positive incentive to showcase that their service standards are consistent, including the safety of their food. Research on the use of regulatory frameworks and market responses shows that the adoption of the risk-based systems is crucial for building trust in consumers which eventually motivates their choice of destination and visit behavior⁴³.

Recognized safety standards act as a signal of reliability, and give hospitality providers a measure of differentiation in a highly competitive landscape. HACCP's international, consolidated use as a reference framework to maintain a high level of standardization within the global tourism industry. This interplay of culinary traditions, production routines, and regulations means that it would need a common approach to enable a structure that could cater to difference while ensuring consistency. In this sense, HACCP serves as a point of convergence, providing a methodological foundation through which hotels and hospitality operators align their practices with internationally recognized standards.⁴⁴ Modern analyses confirm that in its latest form the system gradually broadens its functions, links up with broader managements and adapts itself to newly devised regulations and technology conditions.

⁴⁰ Kumar, A., Sharma, R. A., & Kumar, D. (2009). *HACCP in hotel industry: A study on its application in food production*. *Journal of Hospitality and Tourism Systems*.

⁴¹ Panghal, A., Chhikara, N., Sindhu, N., & Jaglan, S. (2018). *Role of food safety management systems in safe food production: A review*. *Journal of Food Safety*.

⁴² Vaz, D. S., Nobre, I. C. N., Rodrigues, E. F., et al. (2016). *Quality HACCP applied to flight catering industry*. *Independent Journal of Management & Production*.

⁴³ Unnevehr, L. J., & Jensen, H. H. (1999). *The economic implications of using HACCP as a food safety regulatory standard*. *Food Policy*.

⁴⁴ Radu, E., Dima, A., Dobrota, E. M., Badea, A. M., & Madsen, D. Ø. (2023). *Global trends and research hotspots on HACCP and modern quality management systems in the food industry*. *Heliyon*.

3. HACCP AS A FRAMEWORK FOR CREDIBILITY AND MARKET DIFFERENTIATION IN INTERNATIONAL TOURISM

The place of tourist destinations on the map increasingly relies on the capability of hospitality businesses to ensure a consistent approach to food safety in different operational environments. HACCP offers a structured way in which destinations can convey reliability, regulatory discipline, and service integrity in these surroundings. In this context the convergence of food safety governance and tourism policy has become increasingly marked in European settings, where rules govern under what conditions food is prepared, handled, and subsequently served to visitors. This consolidation of regulation allows for a coherent service environment where food safety becomes integrated into broader directions of destination development and consumer protection⁴⁵. An increasing presence of international global food markets has led to an environment where hospitality restaurants utilize input products through complex international supply chains.

Most ingredients come from various regions and take various processes of warehousing and transportation to be processed (refined) before reaching the preparation stage. This level of dispersion calls for a system that can perpetuate the safety standards, despite the origin, handling and regulation of the products. HACCP addresses this structural condition by creating a processing model tracing possible hazards through each phase of the supply chain and controlling over it from any distance or from any location⁴⁶. Hospitality services can thus maintain quality of food safety practices in a disjointed supply chain to ensure a consistent message of quality. The regulatory aspect also supports the use of HACCP in tourism. National laws prescribe binding standards for food service, storage, and processing in hospitality establishments, and by means of local law, an institutional system can provide an integrated legal framework in which HACCP principles are put into effect. In the Republic of North Macedonia, the law governs the legal framework for food safety in the country as regulated by legislation, which regulates the food and materials in contact with food, providing at least bare minimum conditions for the provision of the gastronomy service⁴⁷. Enhancing monitoring programs complement this approach to establish other institutional oversight mechanisms which can ensure adherence to these and standards of sanitation throughout production and processing channels⁴⁸.

With such an environment, HACCP acts as a working tool transferring regulatory expectations to procedural procedures at a site-specific level. This interaction of food safety institutions with destination identity is especially apparent in areas in which gastronomy constitutes a primary component of the tourism goods offer. In Mediterranean settings, food and cultural traditions are closely intertwined with place portrayal informing the way that destinations are understood and lived in. As countries like Italy, Spain and France demonstrate we have hospitality practices that treat the making of food as being both authentic and safe, with a structured approach based on procedures. Within kitchens there are established control structures that preserve the quality of the gastronomy and reinforce the trust of the visitors⁴⁹.

⁴⁵ World Tourism Organization (2004). *Opportunities for Collaboration in the International Standardization of Tourism Services*. Geneva.

⁴⁶ Gehlhar, M., & Coyle, W. (2001). *Global Food Consumption and Impacts on Trade Patterns in Changing Structure of Global Food Consumption and Trade*. ERS/USDA Working Paper WRS-01-1.

⁴⁷ Official Gazette of the Republic of Macedonia (2002). *Law on Food Safety, Products and Materials that Have Food Contact*. No. 54/2002.

⁴⁸ Official Gazette of the Republic of Macedonia (2008). *Monitoring Program on Food Safety in the Republic of Macedonia*. No. 41/2008.

⁴⁹ Laesser, C., & Peters, M. (2009). *Does Personal Interaction Quality Really Pay? On the Influence of Personal Interaction Quality on Willingness to Pay*. Center for Tourism and Service Economics, University of Innsbruck.

It is the juxtaposition of such procedural discipline with cultural exegesis which permits destinations to maintain their allure in a competitive globalization context. Examples from regional contexts show how HACCP related principles play a role maintaining service standards. In regions of Italy famous for its culinary traditions, hospitality services set the rules directly on how food is prepared, on what ingredients to bring to the table, to what facilities and for when.

The system is both a product preserving product and a consumer trust building system of food, strengthening the image of local cuisine as trusted⁵⁰. Similar mechanisms are visible in Spain, the hospitality industry which has introduced food safety procedures to its destination promotion strategy, so that culinary experiences are a kind of uniformity between multiple settings of services⁵¹. In France, established restaurants are still maintaining its global profile through managed kitchen operations and careful sourcing, which ensure both quality and trust in international channels. In Asia similar trends are observed that food stands as a central point of destination attractiveness and attractiveness. In Japan, Japanese hotels use very specific procedures when cooking traditional foods, with the application of rules and procedures for domestic use in Japanese cuisine, this ensures that each restaurant will provide meticulous processes and hygiene to their kitchen environment. This methodical nature has gone hand in hand with an accepted image of trust on the other side of the world that is rooted in Japanese culinary heritage, making cities with a culinary lineage such as Tokyo or Seoul especially appealing and attractive.

The inclusion of safety protocols in a culinary operation of safety programs in food shows that HACCP related to food safety is not only in accordance with, but transcends the level of regulatory requirements, influencing the experiential part of the tourism industry. At the operational stage, it is essential for the hoteliers to train the staff, maintain the process continuity and process automation, and oversee the product according to the temperature in the kitchen. Such steps are not only procedural/technical ones but indicative of an overall move towards uniformity and transparency⁵². The implementation of structured activities eliminates variations in food preparation, ensures the efficiency of personnel and increases staff coordination, contributing to service provision consistency. It is in this regard that HACCP develops an environment where safety, organization and trust are integral. The cumulative effect of these trends is mirrored in the relative placement of destinations on the global tourism market. Food safety standards operate as indicators of institutional credibility that make a difference as determinants for tourist and sector visitors to assess destinations⁵³. By this mechanism, HACCP provides a mechanism for the process of aligning operational practice with market standards, strengthening the ability of destination organizations to maintain their presence in such a competitive global market.

4. ADAPTIVE CONSTRAINTS AND STRUCTURAL LIMITS OF HACCP IN INTERNATIONAL HOSPITALITY AND TOURISM

Formal acceptance of HACCP in hospitality and tourism cannot constitute a sole basis in assessing the international application of this instrument, neither can procedural

⁵⁰ Gehlhar & Coyle, *op. cit.* 17.

⁵¹ Krechmer, K. (2007). *Standards and Standardization*. University of Colorado.

⁵² Holleran, E., Maury, B., & Zaibet, L. (1999). *Private Incentives for Adopting Food Safety and Quality Assurance. Food Policy*.

⁵³ Trienekens, J., & Zuurbier, P. (2008). *Quality and safety standards in the food industry: Developments and challenges. International Journal of Production Economics*.

documentation available within the organizations. The analytical weight of this becomes apparent when focus turns to the conditions under which the system is actually implemented in diverse contexts. Hotels, restaurants, and tourism service providers operate within uneven institutional environments shaped by differences in resources, regulatory frameworks, and organizational discipline. This reality raises a fundamental question regarding the transfer of a standardized preventive model, namely whether a uniform methodological structure can achieve effective outcomes in systems that differ substantially in capacity, control mechanisms, and operational culture⁵⁴. This discrepancy between actual implementation and formal implementation is an essential constraint. In many hotels, HACCP is adopted as an obligation tied to inspections and not as a fully internalized management process. Documented procedures, defined control points, and maintained records may be in place, yet their consistent day-to-day application often remains uncertain. This gap weakens the preventive capacity of the system, since its effectiveness depends on sustained, disciplined execution rather than formal presence.

When procedures are treated as formalities rather than operational practice, the system cannot function as a reliable instrument of control.⁵⁵ The reliance of hospitality on human performance adds yet another layer of complexity. Food preparation in hotel and tourism facilities involves personal touch, fast turning over of food and continual processing of perishable products on a short notice. Differences in staff experience, high turnover rates, temporary or seasonal employment and nonuniform supervision may be determinants for HACCP implementation stability. So, the system thus moves away from technical design and into organizational behavior with the understanding, consistency, and responsibility of personnel influencing the operational reliability⁵⁶.

In small and medium hospitality companies, constraints become more real. Constraints exist in the form of limited financial strength, limited or inaccessible specialized knowledge, and in an environment which is administratively demanding for maintaining the monitoring processes due to which it cannot be feasible to keep the entire HACCP system functional. When it comes to this scale, it could be seen as more complex when compared to the operational scope, determining the extent to which the framework is used. This highlights structural asymmetry within diverse environments, showing that a universally applied model does not adapt with equal effectiveness across all contexts⁵⁷. Regulatory Framework Variability also determines the fate of HACCP deployment. Despite the broad-spectrum success of the system internationally, enforcement and quality of inspection, and institutional support varies from jurisdiction to jurisdiction. In consequence, equivalent principles can produce diverse degrees of efficacy depending on the regulatory situation. In stable environments with transparent supervision and institutional cooperation, HACCP functions as a "functional oversight structure."

When enforcement is weak, an approach can remain an enforceable standard without sufficient operational depth⁵⁸. The global food supply structure is challenging to achieve and

⁵⁴ Manning, L., Luning, P. A., & Wallace, C. A. (2019). *The evolution and cultural framing of food safety management systems: Where from and where next? Comprehensive Reviews in Food Science and Food Safety*.

⁵⁵ Mortimore, S., & Wallace, C. (2013). *HACCP: A practical approach* (3rd ed.). Springer.

⁵⁶ Lee, H.-J., & Hong, W.-S. (2016). *Importance and performance analysis of sanitation management in workers at small and medium foodservice industries using HACCP prerequisites. Journal of the Korean Society of Food Science and Nutrition*.

⁵⁷ Milios, K., Drosinos, E. H., & Zoiopoulos, P. E. (2017). *Factors influencing HACCP implementation in the food industry. Journal of the Hellenic Veterinary Medical Society*.

⁵⁸ Tanceva, V., & Petrevska, B. *Enhancing the Food Safety in the Tourism Sector – The Case of Macedonia. Journal of Hygienic Engineering and Design*.

such limitations are further exacerbated by the complexity of global food supply structure. Hospitality providers depend on inputs to move across interconnected supply chains, logistics, and distribution. The preventive logic of HACCP needs continuity throughout all phases, which, however, relies on independent actors operating in concert. If incomplete coordination occurs, it diminishes the system's ability to keep on top of things.

And the difficulty thus is maintaining procedural continuity in geographically widely spread and organizationally disjointed supply structures⁵⁹. A further aspect relates to the link between methodological uniformity and operational reality at the ground level. HACCP is predicated on universal principles but hospitality products are integrated in particular culinary traditions and making techniques. Practical application depends on the degree to which it can be made to fit the approach to methodological integrity, without upsetting local practice. Where adaptation is inadequate, the system becomes severed from the operations. If flexibility is too high, then procedural discipline is eroded. This balance is being struck an unresolved issue in international hospitality settings⁶⁰. This HACCP implementation is also shaped by the strategic orientation of hospitality operators. Regulatory compliance, access to market, contractual commitments, and reputation are four main reasons why organizations adopt the system. These motivations dictate how deeply HACCP reaches internal processes. Where external pressures drive adoption, implementation can be confined to visibly mandated requirements. Where internal commitment is reflected in the system, it is more likely to be applied systematically and that the system can operate reliably⁶¹.

Therefore, the significance of HACCP in international hospitality and tourism goes deeper than the diffusion of a standardized framework. The success of these systems is predicated on the ability of organizational settings and institutions to effectively translate these formal principles into consistent operational performance⁶². Diversity in resources, regulation, and corporate culture introduce constraints that influence the course of implementation. In order to appreciate the full scope of application in HACCP, attention needs to be given to the constraints, as the potency of an internationally accepted model depends at least in part on a consistent manner of application in varying and uneven settings.

MATERIAL AND METHODS

The research is developed conceptually in accordance with its key theme, addressing the development and international application of HACCP as an applied measure, and with a well-defined research question and topic on which the paper develops based on the nature and the research objective. The research aims to investigate HACCP evolution as an approach of preventive food safety and its application in several international hospitality facilities, focusing on aspects of factors that affect its practices, the practical performance of practice, and the constraints presented by differing regulatory and organizational environments. The topic of the study is the construction of HACCP as an internationally-established theory, which went from its historical foundation into an internationally applicable paradigm, as well as to operational realization in the context of hospitality and tourism industry systems, from an interface with organizational structure, policy structures and regulation and practice of operations in hotels, restaurants and tourism establishments. The methodological

⁵⁹ Nayak, R., & Waterson, P. (2019). *Global food safety as a complex adaptive system: Key concepts and future prospects*. *Trends in Food Science & Technology*.

⁶⁰ Zimon, D., & Madzík, P. (2020). *Standardized management systems and risk management in the supply chain*. *International Journal of Quality & Reliability Management*.

⁶¹ Rincon-Ballesteros, L., Lannelongue, G., & Gonzalez-Benito, J. (2021). *Effective implementation of a food safety management system and its relationship with business motivations*. *British Food Journal*.

⁶² Loader, R., & Hobbs, J. (1999). *Strategic Responses to Food Safety Legislation*. *Food Policy*.

method is based on qualitative research and depends on systematic usage of several scientific techniques used as per the study methodology.

The historical method is used for the construction of HACCP in the section on HACCP development, taking the history from creation to early institutional recognition and eventual expansion to global practice. This approach permits a fair and holistic reconstruction of the development of the system, in addition to providing a foundation for the current use of the system. The descriptive approach is adopted as the sections study the attributes and functioning of HACCP within hospitality systems. Using, the present work covers the composition of the system, its functioning principles and insertion in the system of cooking and service while the complex techniques are explained and presented with clarity in the presentation of complex procedures without reducing analytical depth.

The deductive framework is utilized in all analytical sections throughout the study, interpreting general theoretical knowledge of food safety systems in real-world hospitality and tourism settings. It provides for the research to advance from well-known theoretical frameworks towards a firm conclusion on the effectiveness, restrictions and practical implementation of HACCP. The comparative method is applied when studying international application in which variations in regulation, institution and organizations are compared. This method provides a means of pinpointing variation across countries in the implementation of this technology and helps lay the groundwork for making sense of how the same tool delivers different outcomes in different hotels throughout such places. The study is solely on secondary data, based on empirically validated and scientifically validated sources. The sources for analysis are peer-reviewed journal articles, academic books and institutional publications.

They are obtained from existing databases (Google Scholar, ScienceDirect, SpringerLink, etc.) and international repositories indexed by key high-impact scientific journals and publications. All sources are written for use in established journals and academic publishers, meaning that this approach is rigorously considered academically and highly credible, reliable, and rigorous. The selection of materials follows a strict relevance criterion, including only sources that directly address the research question or make a substantive contribution to the analytical framework of the study.

Priority is dedicated to peer-reviewed articles which relate to the food safety systems, hospitality management and international regulations, and academic journal articles that give theoretical as well as practical understanding in HACCP. The analytical process is completed with structural literature review and interpretation synthesis.

These sources are examined with respect to the purpose of the research with the aim of finding the same pattern, structure, and key elements that affect the implementation of the study. It enables the research to build a coherent analytic argument and to offer systematic analysis of HACCP in the world hospitality and tourism context. The research does not include fundamental empirical analysis, but the application of quality secondary data from reputable and peer-reviewed research sources and internationally known academic databases offer a thorough analytical insight into the subject. This well-defined methodology for analysis and the well-selected materials ultimately provide research objectives and subject aligned with what can be achieved over time, leading to consistent methodology within the study.

RESULTS AND DISCUSSION

By reviewing the selected literature, a systematic discussion emerges that explains how a preventive food safety design has developed into an industry in hospitality and tourism, as well as the circumstances in which such designs work. HACCP no longer functions as a

routine administrative exercise, but stands as a rigorously structured method developed in a context where failure was unacceptable, which explains its enduring orientation toward anticipation, control, and procedural discipline. It is against this baseline orientation which its nature of practice has remained the same, regardless of how much it has spread beyond its original technical environment. The study verifies that the development of the framework is more gradual rather than a one-size-fits-all approach, involving institutional consolidation. It was validated scientifically, standardized into standards and finally recognized internationally, and then used under hospitality and tourism.

This change is not skin deep. It is indicative of changing from a highly specific control system structure to one that can operate internationally and operate at a higher level in service-oriented settings, one where food production also serves as the locus of a broader experiential environment. So, in these contexts, reliability and uniformity are more significant, for quality and safety perception is at stake. A second finding concerns the nature of its worldwide use, showing clearly that expansion across borders does not produce uniformity. The way we apply hospitality systems in practice is influenced, in numerous ways, by their regulatory systems, institutional capabilities, and organizational cultures. With global movements of tourists, raw materials and culinary practices, these systems become interlinked to the point that risk does not reside solely in one particular location. In this context, the framework offers a common procedural logic which allows for some commonality without eradicating structural variation between environments.

At operational level, the analysis distinguishes formal adoption to practical integration. The existence of documented procedures, clearly defined control points, and established monitoring protocols does not in itself ensure effective implementation. The most important result of the study demonstrates that the system achieves impactful outcomes only via its integration onto daily operational practices. Confining factors of hospitality food safety are concrete, such as, storage conditions, temperature management, traceability, hygiene discipline and supervision. When these dimensions are adequately controlled, the framework works as intended. Where they are neglected, its presence there is almost entirely symbolic. Another significant finding has to do with the relationship between controlled food safety and global trust. The findings show that safety is no longer considered just a technical requirement. A single mistake can tarnish, however, an entire destination's reputation in a tourism marketplace that depends on quick information exchange and high sensitivity to adversities. In such cases, a framework that is in place helps in establishing credibility through certainty of service delivery. So, trust is not based on high-level promises, but rather on the presence of a framework that controls how an organization operates. The conversation does also raise some obstacles to this effective application.

One of the recurrent concerns is the distinction between formal compliance and real performance. In a large number of the different hospitality settings, regulatory norms are accepted, although they are not fully embedded in organizational activities. That creates a system where it'd mean more documentation but not that much execution and therefore a diminished preventive potential of the system. Another important dimension is human factors. Hospitality operates in a world of direct interaction, rapid execution, and ongoing processing of perishable products. Differences in training, turnover, and supervision of the staff introduce instability in the use of standard procedures. The results indicate that effectiveness is highly contingent on organizational culture, internal discipline and the extent of internal accountability. In those cases when there is such, there is consistency in application. Where they are weak, results are uncertain. The results are influenced by differences in organizational scale, as larger hospitality systems demonstrate a greater capacity to maintain

procedural consistency through access to resources, structured training, and formalized management practices, whereas smaller establishments face greater difficulty in sustaining the same level of control, which leads to uneven patterns of application. This does not diminish the relevance of the framework, but it clearly reveals the presence of structural asymmetry within the sector. Regulatory diversity introduces an additional layer of complexity, since although the framework is widely recognized at the international level, its practical impact depends on the strength of institutional oversight.

Variations in inspection practices, enforcement mechanisms, and administrative capacity create disparities in implementation across regions. Where regulatory systems are consistent, operational discipline tends to follow, while in environments with limited oversight, application remains incomplete. A further tension arises in the relationship between standardization and localized practice, as hospitality and tourism are closely connected to cultural identity, culinary traditions, and regional preparation methods. Effective application therefore requires a careful balance between methodological rigor and sensitivity to local practices. Where such balance is achieved, structured control enhances reliability without undermining authenticity, whereas imbalance, whether through excessive rigidity or insufficient discipline, weakens the system.

Taken together, these findings demonstrate that this preventive model does not derive its value from formal recognition alone, but from its ability to function within diverse and often inconsistent environments. Its strength lies in the translation of clearly defined principles into consistent operational practice, while its limitations become visible when organizational, regulatory, and human factors restrict full implementation. International application should therefore be understood as a continuous process shaped by adaptation, discipline, and the capacity to maintain reliability within complex service systems.

CONCLUDING REMARKS

The findings position HACCP within hospitality and tourism as a framework whose significance lies in its evolution into a globally recognized system and in the manner of its application across diverse operational environments. Its development reflects a transition from a specialized control model into an approach capable of functioning within complex service structures where food safety is directly connected to the organization and reliability of hospitality services. This transformation demonstrates that the system has expanded in scope while preserving its original preventive logic, allowing it to operate within settings characterized by variability, mobility, and constant interaction with consumers.

The international application of HACCP reveals that its spread does not produce uniform outcomes, but rather exposes differences in how the system is implemented and sustained. The same set of principles enters environments shaped by unequal regulatory frameworks, organizational capacities, and levels of operational discipline, which leads to variation in performance. This confirms that global recognition does not translate into identical results, and that effectiveness depends on the ability of hospitality systems to adapt structured procedures to their specific conditions without weakening their internal coherence. The research highlights that the functioning of HACCP within hospitality is closely linked to the internal organization of service processes. Its effectiveness is achieved where procedures are consistently integrated into daily operations, where responsibilities are clearly defined, and where control is maintained as a continuous practice rather than an occasional requirement. In such settings, the system contributes to stability, predictability, and the overall reliability of food-related services, reinforcing the capacity of hospitality providers to operate within internationally accepted standards.

At the same time, the analysis shows that differences in organizational scale, workforce conditions, and regulatory enforcement shape the extent to which the system can be sustained. Larger and more structured environments demonstrate a stronger ability to maintain procedural consistency, while smaller or less regulated contexts encounter greater challenges. These differences reveal that the international application of HACCP is conditioned by the structural characteristics of the environments in which it is implemented, rather than determined solely by the framework itself. The evolution and application of HACCP therefore converge in a single analytical direction. The system has achieved international relevance through its capacity to adapt to varied contexts, yet its effectiveness remains dependent on the conditions that support its implementation. Within hospitality and tourism, it operates as a mechanism that connects food safety with service organization, institutional reliability, and the broader perception of quality, confirming that its value is realized through consistent application rather than formal recognition.

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