

Research Article

Analysis of Hygiene and Sanitation Implementation in the Pastry Division at Aruss Hotel Semarang

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Abstract: The hospitality industry is a strategic sector within the global tourism system that heavily depends on service quality and food safety assurance. In hotel operations, the pastry division represents a high-risk unit due to the use of perishable ingredients and intensive manual handling processes. This study aims to analyze the implementation of hygiene and sanitation practices in the Pastry Division of Hotel Aruss Semarang in supporting food safety standards within the hospitality industry. This research employs a qualitative approach with a case study design. Data were collected through participatory observation, semi-structured interviews, and document analysis, including Standard Operating Procedures (SOPs), sanitation checklists, and temperature control records. Data validity was strengthened through triangulation and member checking, while thematic analysis was used to identify key implementation patterns. The findings indicate that the implementation of personal hygiene, environmental sanitation, and Good Manufacturing Practices (GMP) has generally complied with most of the requirements of Good Processed Food Manufacturing Practices (CPPOB). The availability of sanitation facilities, periodic medical check-ups, equipment maintenance, and FIFO-based storage systems demonstrate management commitment to preventive risk control. However, inconsistencies in handwashing practices and minor construction details that do not fully meet hygienic design standards indicate areas requiring improvement. Overall, hygiene and sanitation implementation in the Pastry Division has been effective in supporting food safety. Strengthening behavioral compliance, continuous training, and facility optimization are recommended to achieve a more sustainable and comprehensive food safety management system.

Keywords: Food Safety; GMP; Hygiene; Hospitality Industry; Sanitation.

1. Introduction

The hospitality industry is a strategic sector in the global tourism system that is highly dependent on service quality and food safety assurance. In the context of increasingly competitive destinations, the quality of food and beverage products not only determines guest satisfaction but also affects the reputation of the hotel and the overall image of the destination. Organizations such as the World Tourism Organization (UN Tourism) emphasize that service quality and safety standards are important elements in the sustainability of the tourism industry. Therefore, the implementation of hygiene and sanitation in hotel kitchen operations is a fundamental aspect that cannot be ignored.

Food safety in the hospitality sector generally refers to international standards set by the World Health Organization and the Food and Agriculture Organization, specifically through the Hazard Analysis and Critical Control Points (HACCP) approach. These standards emphasize the control of biological, chemical, and physical hazards throughout the food production chain. In a hotel environment, the implementation of these principles is even more crucial in the pastry division, which has high-risk products due to the use of perishable ingredients such as eggs, milk, cream, and chocolate, as well as a production process that involves many stages of manual handling.

The pastry division plays an important role in building the culinary experience of guests, especially in star-rated hotels that prioritize the aesthetics and quality of bakery and dessert

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products. However, the complexity of the pastry production process—from raw material storage, weighing, processing, cooling, to serving—increases the potential for cross-contamination if hygiene and sanitation procedures are not applied consistently. Various studies show that failure to maintain personal hygiene standards, equipment sanitation, and storage temperature control can contribute to foodborne illness incidents that directly impact the image and sustainability of the hotel business.

As one of the star-rated hotels in Semarang City, Hotel Aruss Semarang operates in a destination environment that continues to develop as a business and tourism center in Central Java. In this context, the implementation of an effective hygiene and sanitation system in the pastry division is an important indicator in maintaining food safety standards while supporting the competitiveness of the local hospitality industry. Although various guidelines and regulations are available, implementation at the operational level often faces challenges such as employee compliance, consistency of supervision, availability of sanitation facilities, and organizational work culture.

Based on this background, this study aims to analyze the implementation of hygiene and sanitation in the pastry division at Hotel Aruss Semarang in supporting the food safety standards of the hospitality industry. This study not only evaluates the compliance of operational practices with applicable standards but also identifies the supporting and inhibiting factors in their implementation. The results of this study are expected to contribute theoretically to the development of food safety management studies in the tourism sector and practically to hotel management in improving service quality and consumer protection in a sustainable manner.

2. Literature Review

2.1. Food Safety in the Hospitality Industry

Food safety is a fundamental aspect of the hospitality industry because it is directly related to consumer health, hotel reputation, and business sustainability. Unlike the food manufacturing industry, which operates in a controlled production environment, hotel kitchen operations are dynamic, involve direct interaction with customers, and have a high degree of production process variation. This complexity increases the potential for contamination and food safety control failures.

According to the World Health Organization, foodborne diseases remain a significant global health issue, primarily due to unhygienic food handling practices, cross-contamination, and inadequate temperature control. In line with this, the Food and Agriculture Organization emphasizes the importance of a preventive approach through the Hazard Analysis and Critical Control Points (HACCP) system to identify and control biological, chemical, and physical hazards in the food production process.

Several studies show that the main problem in the hospitality industry is not the absence of standards, but rather the gap between written procedures and daily operational practices. Thus, food safety in hotels needs to be understood not only as a technical system, but also as an organizational and behavioral phenomenon.

2.2 Hygiene and Sanitation Standards: From Regulation to Implementation

Hygiene and sanitation standards in the food service industry generally refer to Good Hygiene Practices (GHP), Good Manufacturing Practices (GMP), and HACCP principles. HACCP focuses on identifying critical control points that must be monitored systematically to prevent food hazards.

Although a comprehensive regulatory framework is in place, empirical findings show that compliance with hygiene procedures in hotel kitchens is often inconsistent. Several studies have identified common problems such as poor hand hygiene compliance, suboptimal equipment sanitation, irregular temperature recording, and weak documentation of.

The ISO 22000 standard has even integrated HACCP into a broader food safety management system by emphasizing documentation, internal audits, and continuous improvement. Some medium-sized hotels often face limitations in resources, training, and managerial oversight in implementing the system comprehensively.

Some findings indicate that formal regulations and standards do not necessarily guarantee effective implementation if they are not supported by organizational commitment and a culture of food safety.

2.3 Compliance and Food Safety Culture Perspectives

The implementation of standards can be influenced by two main approaches:

- 1) Deterrence-based compliance
- 2) Normative compliance

Recent research shows that sustainable compliance is more effective when driven by a strong organizational culture. The concept of food safety culture has become a major focus in recent literature because it emphasizes the role of leadership, communication, training, and employee awareness in shaping daily hygienic behavior.

Studies in the hospitality sector show that the successful implementation of hygiene is not only determined by the existence of SOPs, but also by the extent to which management actively integrates food safety values into daily work practices. Conversely, when hygiene is viewed only as an administrative requirement, compliance tends to be formalistic and unsustainable.

A critical interpretation of these findings shows that an audit-only approach is not sufficient to guarantee food safety. An analysis that examines the interaction between organizational structure, work culture, and operational practices is needed.

2.4 Risk Management in Hotel Kitchen Operations

Risk management in hotel kitchens includes the identification and control of biological, chemical, and physical hazards throughout the food production process. Biological risks, especially microbial contamination, are the most dominant threats in kitchen operations.

The pastry division has different risk characteristics compared to the hot kitchen. Pastry production involves high-risk ingredients such as eggs, milk, cream, and chocolate-based products that are very sensitive to temperature and humidity. In addition, the decoration and finishing processes are often carried out at room temperature and involve intensive manual contact, thereby increasing the risk of cross-contamination.

The risk-based thinking approach as recommended in ISO 22000 emphasizes preventive actions through the identification of potential hazards before failure occurs. However, several studies show that practices in the field still tend to be reactive, i.e., corrective actions are taken after non-compliance occurs.

The gap between the risk management theoretical framework and actual practice indicates the need for context-based research to understand the dynamics of implementation in greater depth.

2.5 Hygiene Practices in Specific Culinary Units

Most food safety studies in hotels treat kitchens as a homogeneous unit, without distinguishing the characteristics of each unit, such as hot kitchens, cold kitchens, and pastry divisions. In fact, each unit has a different risk profile and work pattern.

Several observational studies show that the pastry division is prone to:

- a. Inconsistent storage of raw materials
- b. Shared equipment use without adequate sanitation
- c. Prolonged exposure of products to room temperature

In addition, there is a gap between employee knowledge and actual practice. Although staff have a theoretical understanding of hygiene, work pressure, time constraints, and lack of supervision often lead to a decline in compliance.

These findings indicate that a qualitative approach based on observation and interviews is necessary to capture operational realities that are not revealed through quantitative surveys.

2.6 Synthesis of Theoretical Gaps and Research Position

Based on the above literature review, several research gaps can be identified:

- 1) The lack of studies that specifically examine the pastry division as a high-risk unit in hotels.
- 2) Limited integration between compliance theory and risk management frameworks in hospitality studies.
- 3) The lack of case study-based qualitative research that explores the dynamics of standard implementation at the operational level.
- 4) The lack of empirical evidence from the context of developing tourist destinations such as Indonesia.

Most previous studies have used a quantitative survey approach to measure the dimensions of knowledge, attitude, and practice. Although this approach provides a general overview, it does not fully explain how standards are translated into daily work practices.

This study positions itself at the intersection of food safety management, compliance theory, and operational risk management. Using a qualitative case study approach in the pastry division at Hotel Aruss Semarang, this study aims to provide a contextual understanding of how hygiene and sanitation practices are implemented, monitored, and influenced by organizational factors.

3. Proposed Method

This study uses a qualitative approach with a case study design to analyze the implementation of hygiene and sanitation in the Pastry Division at Hotel Aruss Semarang. A qualitative approach was chosen because this study aims to gain an in-depth understanding of operational practices, work behavior, and the dynamics of compliance with food safety standards.

Case studies enable contextual exploration of the phenomenon of hygiene and sanitation implementation holistically, including organizational factors, work culture, and operational pressures that influence practices in the field.

Data collection was conducted using three main techniques, namely participatory observation, semi-structured interviews, and documentation studies. Observations were conducted during the students' industrial practice period, focusing on pastry production activities, the use of personal protective equipment, equipment sanitation control, and raw material storage procedures. Interviews were conducted with pastry staff, supervisors, and kitchen management to explore their understanding of food safety standards, operational procedures, and implementation challenges. The documentation study included an analysis of standard operating procedures (SOPs), sanitation checklists, and records of temperature control and production area cleanliness.

Informants were selected using purposive sampling, considering their direct involvement in the production process and food safety supervision. Source and method triangulation techniques were used to enhance data credibility by comparing the results of observations, interviews, and internal documents. Data validity was strengthened through member checking, which is the confirmation of preliminary findings with key informants to ensure that the researcher's interpretation was consistent with the operational reality in the field.

Data analysis was performed using thematic analysis techniques, which included data reduction, categorization, theme extraction, and meaning interpretation. The coded data were grouped into main themes such as personal hygiene, equipment sanitation, raw material management, monitoring systems, and food safety culture. The analysis process was conducted iteratively to identify patterns, implementation gaps, and the relationship between formal standards and actual practices. The results of the analysis were then critically interpreted with reference to the food safety management theoretical framework and risk-based approach in the hospitality industry.

3.1. Personal Hygiene

Personal hygiene is a series of efforts made by individuals to maintain, preserve, and improve their overall health, both physically and mentally. The concept of personal hygiene is not only oriented towards physical cleanliness, but also relates to the psychological and social conditions of individuals, because personal hygiene can affect self-confidence, comfort, and the quality of interactions in the work environment.

In the context of hotel operations, especially in food processing, the implementation of personal hygiene is an integral part of the food safety system. Hotels provide special sanitation rooms as sterile areas for workers before entering the kitchen to ensure that personal hygiene is maintained in accordance with applicable standards. Aspects that are taken into consideration include hair hygiene, hand hygiene (including fingers and nails), and the use of clean work clothes (wearpacks) that comply with regulations.

In addition, the hotel conducts periodic medical check-ups for all workers who serve as food handlers every six months. These health checks aim to ensure that all staff are in good health and fit to work, thereby minimizing the risk of food contamination originating from worker health factors.

Daily checks are also routinely conducted on staff personal hygiene, which includes checking nail cleanliness, the use of head coverings, and the prohibition of wearing accessories

during working hours, especially in the pastry kitchen area. Based on observations, these procedures have been implemented consistently and in accordance with the Standard Operating Procedures (SOP) established by management.

3.2. Environmental Sanitation

Workplace sanitation is an important component in maintaining the quality and safety of food processing in the hospitality industry. Environmental sanitation includes not only the cleanliness of the production area, but also the maintenance of supporting facilities and work equipment that are used regularly. This study analyzes the implementation of environmental sanitation aspects based on several key indicators, namely periodic cleaning of work rooms, equipment maintenance, grease trap cleaning, and maintenance of modern machines used in daily operations.

Workroom cleanliness is observed through routine cleaning activities carried out before, during, and after the production process. Evaluations are conducted on the condition of floors, walls, work tables, ventilation systems, and food storage areas. Periodic cleaning aims to prevent the accumulation of dirt and the potential growth of microorganisms that can cause cross-contamination.

Equipment maintenance is an important aspect of this study, considering that equipment that is used continuously has the potential to become a medium for contamination if not properly maintained. The maintenance process includes cleaning, sanitation, calibration, and periodic checking of equipment functions in accordance with the schedule set out in the Standard Operating Procedures (SOP).

The cleanliness of grease traps is also a special concern in environmental sanitation analysis. Grease traps that are not cleaned regularly can cause fat buildup, unpleasant odors, and the risk of workplace contamination. Therefore, this study assesses the frequency of cleaning and liquid waste management systems as part of efforts to maintain kitchen sanitation.

In addition, the use of modern machines in daily operations is also analyzed in terms of cleanliness and maintenance. Machines that are used every day, such as ovens, mixers, chillers, and other cooling equipment, require consistent cleaning and maintenance procedures to remain hygienic and function optimally. Observations were made to determine the suitability of the established procedures with practices in the field.

3.3. Good Manufacturing Practices (GMP)

Good Manufacturing Practices (GMP) are basic guidelines to ensure that the preparation, processing, and distribution of food are hygienic and comply with applicable regulations. The implementation of GMP aims to prevent food contamination that can pose health risks. Poor production environment hygiene and errors in food handling have the potential to cause the spread of foodborne diseases. In general, GMP has three main aspects, namely:

- a. The purpose of GMP, which is to ensure that the food products produced are safe, healthy, and suitable for consumption by the public;
- b. The benefits of GMP, which are to assist the food industry, whether small, medium, or large scale, in minimizing food safety risks and improving the performance of quality control systems;
- c. GMP requirements, which are based on Minister of Industry Regulation No. 75/M-IND/PER/7/2010 concerning Good Processed Food Production Practices (CPPOB), covering 18 main aspects, including location, buildings, sanitation facilities, machinery and equipment, raw materials, process control, final products, laboratories, employees, packaging, labeling, storage, maintenance and sanitation programs, transportation, documentation, training, product recall, and implementation of guidelines.

In practice, food processing carried out in kitchens must follow the principles of Good Manufacturing Practices (GMP) to ensure product safety and quality. Based on observations of GMP implementation in the Pastry section of the Aruss Hotel in Semarang, most parameters have met the established standards.

- 1) In terms of location and environment, the kitchen area is considered safe, tidy, and has a well-classified water drainage and waste management system. In terms of building and

- 2) layout, although the production space is relatively limited, it is considered efficient and in accordance with production capacity and the number of employees. However, in some parts, the floor and wall joints still form right angles that do not fully comply with hygienic construction requirements.
- 3) The floors, walls, and ceilings generally meet the criteria of being waterproof, easy to clean, and free from structural damage. The lighting and ventilation systems function optimally, equipped with lamp covers and exhaust fans that are cleaned regularly. The water source comes from PAM and branded drinking water, which meet clean water standards for food processing.
- 4) In terms of waste management, there are drainage channels equipped with valves and grease traps to control fatty waste. Hand washing and employee hygiene facilities are available with liquid soap and dryers, although there is no separate storage area for work shoes and outdoor shoes.
- 5) All production equipment and modern machinery are maintained and cleaned on a scheduled basis. The layout of the machinery is considered efficient and supports the smooth running of the production process. The processing is carried out based on standard recipes with temperature control using modern equipment. Critical factors such as time and temperature have been incorporated into the operational guidelines.
- 6) In terms of the final product, the production results are declared to meet quality standards and are safe for consumption. However, the hotel does not yet have an internal laboratory for testing ingredients and final products, so further testing is not carried out independently.
- 7) The employee and personal hygiene aspect shows that most workers wear full uniforms and maintain personal hygiene, although hand washing compliance after work is not yet fully consistent. Smoking areas have been separated from production areas.
- 8) The raw material storage system has implemented the FIFO (First In First Out) principle, with clean, tidy, pest-free rooms and good air circulation. Building maintenance and sanitation are carried out regularly three times a week, accompanied by pest prevention measures.

Overall, the observations show that the implementation of GMP in the Pastry section of Hotel Aruss Semarang has been running well and meets most of the CPPOB requirements. However, there are still several aspects that need improvement, particularly in the details of building construction and the consistency of employee hygiene practices, in order to achieve optimal and sustainable GMP standards.

4. Results and Discussion

The results of the study show that the implementation of personal hygiene, environmental sanitation, and GMP in the Pastry Division of Hotel Aruss Semarang is in the good category and complies with most CPPOB requirements. These findings indicate management's commitment to maintaining food safety through the provision of facilities, the development of SOPs, and operational supervision.

From a food safety management perspective, consistent implementation of personal hygiene is the main foundation in preventing cross-contamination. The availability of sanitation rooms and periodic medical check-ups reflects a risk-based preventive approach. However, inconsistencies in hand washing practices indicate that individual behavior factors remain a challenge in optimal implementation of standards. This is in line with the theory that compliance with standards is influenced not only by formal regulations but also by work culture and direct supervision.

In terms of environmental sanitation, the scheduled maintenance of modern equipment and machinery demonstrates the application of preventive maintenance principles in the production system. The presence of grease traps and a good ventilation system supports the control of environmental contamination risks. This practice reinforces the GMP approach, which emphasizes control of the physical conditions of the production environment.

The implementation of GMP, which has met most of the CPPOB requirements, shows that the food safety system in the Pastry Division is well structured. However, the fact that the building construction does not yet fully meet hygienic standards and that there is no internal laboratory indicates that the system still needs to be strengthened.

These findings indicate that the gap in implementation lies not in the absence of procedures, but in the optimization of technical details and consistency in employee behavior.

Therefore, improved continuous training, stricter supervision, and periodic evaluation of physical facilities can be strategies for future improvement.

Overall, the results of the study indicate that the implementation of hygiene and sanitation in the Pastry Division of Hotel Aruss Semarang has been effective and supports food safety. However, to achieve optimal and sustainable GMP standards, strengthening of technical aspects of the building and consistency in employee personal hygiene practices are required.

5. Conclusions

Based on the results of the study on the implementation of personal hygiene, environmental sanitation, and Good Manufacturing Practices (GMP) in the Pastry Division of Hotel Aruss Semarang, it can be concluded that the hygiene and sanitation system has been implemented well and meets most of the requirements of Good Processed Food Manufacturing Practices (CPPOB).

In terms of personal hygiene, employees have demonstrated compliance with the use of complete work uniforms, head coverings, and the implementation of daily hygiene checks. The availability of sanitation facilities and the implementation of medical check-ups every six months reflect management's commitment to maintaining the health of workers as part of the food safety system. However, inconsistencies were still found in hand washing practices after work, which requires strengthening supervision and ongoing guidance.

In terms of environmental sanitation, the condition of the production room, equipment, ventilation, lighting, and waste management system have met operational hygiene standards. Modern equipment and machinery maintenance is carried out on a scheduled basis, and the raw material storage system has implemented the FIFO principle. This shows that environmental contamination risk control has been carried out systematically.

In the implementation of GMP, most of the 18 aspects of CPPOB have been fulfilled, including location, buildings, sanitation facilities, process control, and final product quality. However, there are several aspects that still need improvement, such as building construction details that do not fully comply with hygienic principles and the lack of an internal laboratory for testing materials and products.

Overall, the implementation of hygiene and sanitation at the Pastry Division of Hotel Aruss Semarang can be categorized as effective and in accordance with applicable standards. Nevertheless, optimization of technical aspects of facilities and consistency in employee behavior need to be continuously improved in order to achieve more comprehensive and sustainable food safety standards.

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