

## Evaluating Hygiene and Sanitation Practices in Pastry Equipment

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### Abstract

Hygiene and sanitation in pastry production are essential to ensure food safety, maintain product quality, and build customer trust. Pastry production involves intricate tools and processes where hygiene plays a critical role in preventing contamination and ensuring safe consumption. This qualitative study examined the cleanliness and sanitation of pastry utensils of two prominent hotels in Bandung, Indonesia. Through a combination of observational assessments and semi-structured interviews, this study uncovered existing practices, identified potential vulnerabilities, and proposed targeted improvements to enhance overall equipment hygiene standards in pastry production settings. The findings are poised to contribute to the greater understanding of cleanliness and sanitation protocols' impact on culinary productions.

### Keywords

*Hygiene, Sanitation, Pastry Equipment, Pastry Kitchen.*

## Introduction

The creation of pastry products relies not only on skillful techniques and quality ingredients but also on stringent adherence to hygiene and sanitation standards throughout the production process. From the initial stages of ingredient preparation to the storage and maintenance of specialized equipment, every aspect of pastry production demands detailed attention to cleanliness to ensure product safety and integrity.

Maintaining hygiene, sanitation, and ensuring food safety is the primary concerns demanding focus in hotel management (Baser et al., 2017). The significance of these factors within the domain of pastry operations cannot be overstated. Numerous regulatory bodies have emphatically highlighted the pivotal role of maintaining impeccable sanitation standards. This emphasis is crucial in preventing potential foodborne illnesses and in cultivating and preserving consumer confidence in the exceptional quality of baked goods (World Health Organization, 2006).

Maintaining stringent cleanliness standards within hotels necessitates the systematic implementation of tailored strategies and the continuous education of hotel managers and staff in rigorous hygiene protocols (Sanlier, 2009). However, research indicates a concerning trend: both individuals employed in the food industry and customers frequently demonstrate a lack of comprehensive knowledge and tend to disregard crucial safety measures during the preparation and handling of food (Jevšnik, Hlebec, & Raspor, 2008). This underlines the pressing need for comprehensive training programs and heightened awareness initiatives to bridge these gaps in understanding and ensure the consistent application of food safety practices across the hospitality and food service sectors.

Numerous studies have contributed to understanding hygiene practices in food-related settings. An investigation focusing on commercial bakeries provided insights into hygiene practices but lacked a specific examination of high-end pastry production (Van Der Spiegel et al., 2005). In the case of hand-made pastry production, food business operators demonstrate insufficient understanding of essential preventive measures like good hygienic practices, good manufacturing practice, and hazard analysis critical control point codex requirements, impacting their ability to ensure the delivery of safe, high-quality food products to consumers (Nannini et al., 2010).

Hygiene refers to the conditions or habits individuals employ to preserve or enhance their well-being through the maintenance of cleanliness for both them and their environment (Aiello et al., 2008). Meanwhile, proper

sanitation practices, as highlighted in the source, include the provision of sanitation facilities like toilets, safe sewage systems, and waste management strategies aimed at preventing waterborne diseases, maintaining clean environments, and improving overall community health (Bartram & Cairncross, 2010).

Hygiene and sanitation cannot be negligible, otherwise they can harm food and the consumers. For instance, the examination of the cream pastries revealed substandard microbiological quality, indicating a potential health risk for consumers (Elmali et al., 2007). To handle the issue of food contact surfaces, strict compliance to the cleaning and sanitation procedures is crucial (Losito et al., 2017). Furthermore, it is crucial to conduct regular hygiene evaluations among food handlers in diverse food service units, particularly in pastry or bakery establishments, emphasizing the importance of promoting hygiene awareness (Alves et al., 2021).

Evaluations of high-end bakery or pastry production highlighted specific practices but lacked comparative analysis with mid-range or budget pastry establishments, leaving a gap in understanding varying sanitation standards across different segments of pastry production (Ngahane, Nde, & Ngomo, 2013; Padmavathi & Praveen, 2023). These studies collectively touch on aspects related to hygiene in pastry production but fail to comprehensively address the nuances and challenges specific to pastry settings, indicating a notable gap in understanding hygiene and sanitation within this culinary domain.

Despite existing general guidelines on food hygiene, there remains a shortage of comprehensive studies that specifically delve into the multifaceted aspects of maintaining sanitation standards throughout the entirety of pastry production (Alves et al., 2021). Such an in-depth examination is essential, considering the delicate nature of pastry ingredients, the intricacies of preparation methods, and the diverse array of specialized equipment integral to the process.

This study aims to fill this gap by conducting an evaluation of hygiene and sanitation practices deployed in the production of pastry products, encompassing every stage from ingredient handling and preparation techniques to the storage and maintenance of pastry equipment. By scrutinizing each stage of the production process, this study seeks to reveal best practices, highlight challenges, and propose evidence-based recommendations that can reinforce the hygiene and sanitation protocols within pastry kitchens.

Guests or potential hotel visitors often wonder about the quality of hygiene and sanitation in pastry operations. There is a common inquiry regarding whether various star-rated hotels uphold similar standards of

hygiene and sanitation. Hence, this study aimed to explore this by examining the hygiene and sanitation practices concerning pastry equipment in both four- and five-star hotels. It is hoped that the findings of this study could serve as a foundational resource, guiding pastry chefs, culinary educators, and regulatory bodies toward establishing comprehensive standards ensuring the safety and quality of pastry products.

## Method

This research employed a comparative approach, focusing on two hotels to analyze and contrast their similarities and differences. The study aimed to examine specific aspects of the subject under investigation through a defined perspective, comparing various facts and characteristics. Comparative case studies serve as an effective qualitative method in social research, proving valuable due to their capacity to integrate information from diverse times and locations, thereby effectively examining the influence of policy and practice across different fields (Bartlett & Vavrus, 2017).

To collect the primary data, semi-structured interviews were conducted with executive chefs and pastry chefs at Hotel Horison and The Papandayan Hotel, while observations were made to identify and directly identify equipment operations in the pastry division. Through observation, valuable primary data is acquired, proving instrumental in analysis and providing insight into potential obstacles encountered while utilizing pastry equipment. The data analysis involves organizing data sequences into patterns, categories, and fundamental units of description, separate from interpretation, which assigns meaningful significance to the analysis by explaining descriptions, identifying patterns, and seeking relationships between dimensions (Veal, 2017).

Drawing on Miles & Huberman's (1994) qualitative data analysis framework, this study began its data analysis by thoroughly reviewing diverse data sources from semi-structured interviews, written observations, and official documents. Following this comprehensive review, the subsequent phase involved data reduction, achieved through a core summary, i.e., a process aimed at retaining essential statements within it. The subsequent phase involved organizing these elements into units, which were then classified in the subsequent step through the creation of categories. Following this stage, the process moved on to interpreting the data, employing specific methods to transform preliminary results into substantial ideas.

## RESULTS AND DISCUSSION

The investigation into the hygiene and sanitation protocols specific to hotel pastry equipment unveiled multifaceted insights into the current state of

cleanliness practices within these specialized culinary environments. Our analysis revealed a blend of adherence to standard sanitation guidelines and areas where lapses or challenges persisted. We initiate this section by outlining the empirical settings briefly. Subsequently, we delve into the implementation of hygiene and sanitation practices within pastry production, exploring the challenges faced in their application, and proposing recommendations for optimal implementation in this domain.

### **Empirical Settings**

The food and beverage department is one of the important services for ensuring guests' satisfaction. This department plays a crucial role in the creation and presentation of pastry products. The department is also responsible for processing, serving and selling food and beverage products. The partnership between the department and pastry chefs, along with their capacity for innovation and recipe adaptation, greatly enhances the hotel's distinctiveness and competitive advantage (Rutherford & O'Fallon, 2007). Hotels might feature specialized culinary divisions within their primary kitchen, such as a dedicated pastry section responsible for baking bread, crafting pastries, and preparing desserts (Barrows & Powers, 2009).

The two hotels in stud study boast pastry products tailored to meet the demands of their respective customers. Both hotels have distinct nuances in their culinary approaches and kitchen setups emerge. At both hotels, the pastry sections display a focus on artisanal techniques, with an emphasis on handcrafted pastries and desserts. Moreover, pastry sections lean towards modernity, employing cutting-edge equipment and technology to streamline production and achieve precision in baking. These features not only shape the culinary offerings but also reflect differing values in culinary artistry and service within these two hotels.

### **Hygiene and Sanitation Practices**

As the food service system has grown more intricate and expanded in operations, the occurrence of food-borne illnesses has risen, posing a significant threat to a restaurant's reputation with just a single case of food poisoning, while multiple instances can seriously jeopardize the survival of the operation (Barrows & Powers, 2009). The scope of sanitation related to health includes, among others: ensure a clean and good work environment and workplace, protect everyone from environmental factors that can cause disturbances to physical and mental health, prevent the emergence of various kinds of infectious diseases, and prevent accidents and ensure work safety.

### **Hotel Horison Bandung**

This hotel offers high-quality pastry items like cakes, bread, and desserts to its guests, catering to various services such as breakfast, lunch, dinner, coffee breaks, and events hosted at the hotel. To ensure efficiency in pastry production, the hotel has invested in a wide array of equipment to support the pastry chefs and staff.

The food control must cover the hygiene of food preparation, storage, display and sale areas, and personnel (Knowles, 2022). The procedure for using equipment and utensils in the pastry kitchen is as follows:

1. Ensure daily cleaning of equipment.
2. Equipment must be dry before use.
3. Avoid using damaged equipment.
4. Clean equipment before using it for different purposes multiple times.
5. Clean and dry rusty or crusty equipment before using it.
6. Use plastic or stainless steel for food storage to prevent reactions with acidic foods, unlike aluminum or copper.
7. Regularly inspect and keep the chiller/warehouse clean to prevent food contamination.
8. Separate cooked/ready-to-eat food from raw materials to prevent cross-contamination.

Every day at the hotel, there is a regular routine of handling equipment in the pastry section as it is consistently required in food production. Cleaning kitchen utensils is among the routine tasks performed to uphold cleanliness. *Firstly*, all kitchen utensils must be cleaned using appropriate cleaning agents in adherence to specific standards. Sort the equipment by type and wash each using designated cleaning fluids suitable for stainless steel, ceramic, glass, and other materials.

*Second*, there must be a regular clean-up of large kitchen appliances like ovens, mixers, and other sizable equipment typically after operational hours to avoid disruption. For ovens, use a damp cloth and specified cleaning solutions. Similarly, clean bread mixers by first scraping off remaining dough and then using a damp cloth with cleaning liquid.

*Third*, soaking as a cleaning method is employed wherein spoons, forks, chopsticks, and small serving plates for cut cakes are soaked in a specialized cleaning solution. This process helps loosen remaining food residues, facilitating easier cleaning. These routines are conducted daily as these tools are integral to the hotel's operations.

At this hotel, there are instances where staff overlook essential personal hygiene protocols. Some common occurrences include not using gloves during the production process, neglecting to wear masks while working,

especially when ill, and frequently skipping the use of soap when washing hands. Despite being perceived as less crucial, the proper use of gloves, masks, and soap is vital in preventing contamination of pastry food products at the hotel. Concerning this crucial issue, following the discovery of a notable contamination frequency among utensils and equipment in pastry/bakery settings, Alvez et al. (2021) advocated for food handlers to be educated and made aware of essential hygiene protocols, including regular handwashing, glove usage, and proper storage of kitchen tools, aiming to enhance overall hygiene conditions.

These issues are multifaceted, with several contributing factors at play. One of the primary elements revolves around the awareness levels of the staff and trainees. When there is a lack of comprehensive understanding regarding the crucial significance of implementing and maintaining a robust hygiene system, adherence to established procedures becomes increasingly challenging. This knowledge gap hinders the seamless execution of necessary protocols, potentially compromising overall hygiene standards within the hotel environment.

Another substantial factor lies in the high hotel occupancy rates. The bustling nature of a busy hotel creates an environment where food handlers are consistently engaged in various tasks. This constant activity can inadvertently divert their attention from strictly adhering to the prescribed and necessary hygiene procedures. As they juggle multiple responsibilities in a fast-paced setting, the focus on hygiene might inadvertently take a back seat, leading to unintended negligence of established protocols and compromising the overall standards of cleanliness and safety within the food handling processes.

Considerations regarding the utilization of baking equipment at the hotel involve safety and sanitation. In terms of safety, in the pastry department, various tools, from large implements to smaller ones like knives, carry potential hazards for kitchen staff. Accidents can occur if these tools are not used with caution. Here are two guidelines for using kitchen utensils: a. Avoid using equipment unless you're familiar with its proper usage. Seek guidance from knowledgeable individuals to prevent any mishaps and ensure the safe use of kitchen tools. b. Thoroughly clean and return all used kitchen equipment to their designated places after work. Following the correct procedures ensures equipment longevity and prevents damage.

On the other hand, sanitation is integral to guaranteeing food safety (Barrows & Powers, 2009). Regularly cleaning all kitchen tools is crucial for smooth pastry production. Immediate reporting of any damaged equipment is necessary for prompt repairs. Maintaining sanitary conditions during

preparation, processing, and presentation of pastry products is essential. Additionally, ensuring proper exhaust ventilation throughout the process is vital. If bakeries and individuals follow proper work practices and utilize appropriate local exhaust ventilation, they should meet the procedure's compliance requirements (Elms Rahman, & Garrod, 2005).

## **The Papandayan Hotel Bandung**

Maintaining hygiene and sanitation in a workspace, particularly the kitchen where food is prepared for guests, stands as a fundamental priority. However, an evaluation of practices within the pastry division of the hotel reveals a substantial discrepancy between observed practices and the set standards of the establishment. Notably, a staggering 90% of the staff are observed to neglect proper storage of utensils, and there is a prevalent misuse of cleaning tools. An instance of this misuse is the dual use of a single cloth for wiping tables and cleaning equipment during food preparation, contradicting the hotel's prescribed hygiene protocols.

Within the operational framework of the kitchen, the opening and closing procedures hold significant importance, as emphasized by Barrows & Powers (2009). It is crucial for the kitchen manager to oversee these routines meticulously as they have a direct impact on the maintenance of cleanliness and sanitation. Additionally, the implementation of regular pest control measures is imperative to prevent the proliferation of disease-carrying insects and rodents. Essential hygiene measures include frequent cleaning schedules adapted to the pace at which the area accumulates dirt, ensuring the pristine condition of all equipment used for food preparation, maintaining cleanliness of utensils for guest service, and upholding stringent standards to prevent contamination of food and beverages. Equally vital is the assurance that the hotel's water supply meets stringent health requirements.

The consequences of environmental cleanliness reverberate profoundly within the workspace. A lack of cleanliness not only affects the physical work environment but also influences the well-being of the staff and compromises the quality of food produced. This interconnectedness underscores the significance of maintaining a meticulously clean work environment to meet established cleanliness standards. In this case, Rutherford & O'Fallon (2007) highlighted the importance of shifts in a hotel's catering sales and service process wherein guests should receive attentive care, timely service, and high-quality standards in food, presentation, cleanliness, ambiance, and thorough attention to details.

Discrepancies emerge between the documented standard operating procedures of the hotel's pastry kitchen and the observed practices. While the



written procedures stress the necessity of using pristine equipment for food preparation, practical implementation sometimes falls short. Instances are noted where tools are not thoroughly cleaned even after undergoing the washing process. Furthermore, there is a deviation from protocol, where equipment is dried using cloths that are not designated for such purposes.

Educating the staff in the pastry division of the hotel about the criticality of maintaining high levels of hygiene and sanitation within the kitchen is paramount. This knowledge is important in ensuring a more rigorous adherence to cleanliness protocols throughout the food production process. More importantly, Food safety knowledge is to ensure public health by preventing foodborne illnesses and the consumption of safe and uncontaminated food (Jevšnik et al., 2008; Baser et al., 2017).

Despite comprehensive staff training sessions emphasizing the importance of strict adherence to hygiene standards, the observed practices within the pastry division do not consistently align with these directives. The gap between theory and practice is evident, notably in the inadequate adherence to guidelines such as the proper storage of utensils, the imperative of handwashing before commencing work, the principle of continuous cleanliness during work processes, and the segregation of clean and soiled rags.

Addressing the prevalent lack of adherence to hygiene and sanitation protocols within the hotel's pastry division necessitates a more in-depth inquiry into the root causes underlying these deviations from established standards. Food hygiene protocols are not just a set of rules; they are a critical aspect of running a successful, responsible, and customer-oriented hospitality business (Knowles, 2002).

Observations have identified several underlying causes contributing to the observed lapses, including insufficient attention from management towards fostering a culture of hygiene and sanitation within the pastry division, overburdened staff schedules leading to hurried work and subsequent oversight of hygiene protocols, and inadequate supplies of cleaning materials, forcing staff to resort to reusing cloths for multiple purposes, thereby compromising hygiene standards.

Through observations and interviews conducted with pastry employees at the hotel, these issues hindering the successful implementation of hygiene and sanitation practices within the pastry division have been highlighted and require immediate attention and resolution.

## **Challenges in the Hygiene and Sanitation Practices**

Implementing high standards of hygiene and sanitation in hotel food production presents a variety of challenges that demand thorough attention to

detail. From ensuring stringent cleanliness across food preparation areas to maintaining proper storage and handling practices, hotels face the constant task of upholding rigorous standards amid diverse operational complexities (Knowles, 2002). Some factors implying ongoing challenges in achieving and sustaining hygiene and sanitation within hotel pastry production have been identified, including staff training, adhering to regulations, managing perishables, and consistently monitoring hygiene protocols.

#### 1. Complexity of Equipment

Pastry equipment often consists of intricate parts and components, such as nozzles, molds, and fine machinery, which can be challenging to disassemble and clean thoroughly. The complexity of these tools makes it harder to reach all surfaces, increasing the risk of residual food particles or bacteria. In this case, an informant (executive chef) admitted that “Disassembling and cleaning intricate tools like piping tips or pastry molds is meticulous. Sometimes, reaching every nook and cranny is a challenge. It’s time-consuming, especially with small parts that require thorough cleaning.” Concerning this issue, Knowles (2002) proposes that the criteria should broaden to cover both the structure and gear of places where food is managed. This involves ensuring cleanliness in facilities, maintaining a safe water supply, proper handling of waste and effluents. Moreover, hygiene standards involve the upkeep of buildings and equipment, cleaning and disinfecting structures, as well as managing the storage and disposal of waste.

#### 2. Training and Awareness

This issue was revealed by a pastry chef. He said, “Ensuring all staff follow the cleaning protocols is challenging. Not everyone understands the intricacies of cleaning pastry equipment. It requires ongoing training and reinforcement of hygiene practices.” Ensuring all kitchen staff understand and adhere to proper cleaning protocols for pastry equipment can be challenging. Misunderstandings or lack of training might result in inconsistent or inadequate sanitation practices. Hence, Alves et al. (2021) recommended raising awareness about hygiene practices among food handlers in various food service establishments, emphasizing the importance of regular evaluations of hygiene standards.

#### 3. Risk of Cross-Contamination

An executive chef said, “We use the same equipment for various pastries, but ensuring zero cross-contamination is tough. Even after cleaning, there is always a lingering concern about allergens from the previous use.” In this case, Labović et al. (2023) suggested that education significantly

contributes to improving how individuals who handle food manage it, consequently decreasing the chances of food contamination.

Pastry equipment is used for various ingredients and products, increasing the risk of cross-contamination if not cleaned properly between uses. Ingredients like nuts, dairy, or gluten could pose allergy risks if equipment isn't sanitized effectively. The rise in food-related illnesses has grown alongside the complexity of the food service system and the expansion of its operations. A single instance of food poisoning can significantly damage a restaurant's reputation, while multiple cases can pose a serious threat to the survival of the business (Barrows & Powers, 2009).

#### 4. Time-Consuming Cleaning Process

Thoroughly cleaning intricate pastry equipment is time-consuming. Disassembly, cleaning, and reassembly take significant time, impacting kitchen productivity. In busy environments, there might be pressure to expedite the cleaning process, risking incomplete sanitation. A long duration of cleaning is admitted by a pastry chef, "In a busy kitchen, there is a constant pressure to clean quickly to keep up with demand. But detailed cleaning of pastry equipment can slow down our workflow, affecting productivity during rush hours." This matter is intricately linked to staffing and scheduling considerations. Here, tasks such as cleaning the food and beverage areas, dishwashing, handling kitchenware, and overseeing general food and beverage service are typically delegated to a distinct subdivision called the stewarding department (Rutherford & O'Fallon, 2007).

#### 5. Temperature Sensitivity

Regarding this challenge, one pastry chef claimed, "Maintaining proper temperatures during cleaning can be tricky, especially with ovens or refrigerators. A wrong temperature could affect equipment functionality or potentially compromise food safety." This interview excerpt emphasizes the critical role of kitchen equipment temperatures in preserving pastry products. Roday (2011) points out that both high and low temperatures play a crucial role in influencing microbial growth. High temperatures (above 65°C) effectively eliminate microorganisms, while low temperatures (below 5°C) hinder their growth. Some pastry equipment, such as ovens or refrigeration units, requires specific temperature controls. Improper temperature management during cleaning could affect the equipment's functionality or compromise food safety.

## Optimizing the Hygiene and Sanitation Practices

In examining the hygiene and sanitation practices within the pastry divisions of both hotels, it became evident that despite the existence of standard

operating procedures (SOPs), optimal adherence was lacking. At Horison Hotel, several lapses were observed. Instances where equipment was inconsistently returned to their designated places after use highlighted a potential concern. Furthermore, occasional instances of staff neglecting to wash their hands thoroughly with soap or overlooking the usage of masks while unwell, along with the omission of gloves during the production process, were noted. These deviations from established protocols raised concerns about maintaining stringent hygiene standards.

Conversely, The Papandayan Hotel exhibited different challenges in their sanitation practices. Here, the issues primarily revolved around a shortage of adequate cleaning materials and tools. This scarcity hindered the staff's ability to uphold optimal cleanliness standards. Additionally, there was an observed lack of meticulousness in differentiating between clean and dirty rags, potentially compromising hygiene protocols. Equipment being frequently misplaced or left out of its designated positions also contributed to concerns regarding the maintenance of a sanitized workspace. These variations in issues between the two hotels underscore the necessity for comprehensive improvements in sanitation practices across both establishments.

When it comes to food processing, the repercussions of deviating from established procedures reverberate across various facets of public health and safety. A significant concern arising from non-compliance is the heightened risk of food contamination, as highlighted by Labović et al. (2023). This contamination can stem from various sources, including improper handling, inadequate storage, or faulty equipment, potentially leading to detrimental consequences for consumers. Moreover, the link between non-adherence to processing protocols and skin diseases, as underscored by Hon et al. (2021), emphasizes the direct impact on workers' health within the food industry. Additionally, Barrows & Powers (2009) draw attention to the severe implications of such negligence, citing instances of food-borne illnesses that result from non-compliance. Hence, strict adherence to food safety management protocols is imperative to mitigate these multifaceted risks and uphold the integrity of the food processing industry.

Recognizing the significance of people's attitudes, skills, commitment, and behaviors is important for successful food safety management. Evaluating and enhancing food safety culture not only identifies areas for improvement but also supports informed decision-making and promises better public health outcomes and business success (Frankish, Ross, & Bowman, 2024). Therefore, selecting the most suitable method for ensuring food hygiene is essential to maintain and improve compliance with regulations in food establishments

(Bari & Kawasaki, 2014). The challenge is to find an approach that best aligns with the specific characteristics required for your practical context.

Numerous interrelated factors contribute to the suboptimal implementation of hygiene and sanitation practices concerning pastry equipment in both hotels' culinary establishments. Predominantly, a fundamental issue lies in the inadequate level of staff awareness coupled with the pervasive high activity levels within these culinary settings. The deficiency in staff awareness stems from a lack of comprehensive knowledge regarding the principles of hygiene and sanitation. Often, employees may not have received adequate training or guidance on the significance of these practices, leading to a casual approach or misunderstanding of their importance. Additionally, the absence of consistent supervision from higher authorities further compounds this challenge, allowing for the inadvertent flouting of established hygiene norms.

Moreover, the demanding and bustling environment prevalent in these hotel kitchens contributes significantly to the impediment of strict adherence to hygiene protocols. The pressing workload stemming from a consistently high demand for pastry products exerts immense pressure on staff members. This perpetual high demand necessitates swift and efficient production, compelling employees to work rapidly and meticulously to meet customer expectations. However, this heightened pace sometimes leads to inadvertent oversight of hygiene and sanitation standards in their pursuit of meeting production quotas. The urgency to fulfill orders and maintain operational efficiency may result in instances where accurate adherence to hygiene guidelines takes a backseat.

Consequently, the confluence of these factors – inadequate staff awareness, lack of supervision, and the exigencies of a fast-paced, high-demand work environment – collectively hampers the strict implementation of hygiene and sanitation practices in handling pastry equipment within these esteemed hotel kitchens. Efforts to address these issues might necessitate comprehensive training programs, increased supervisory involvement, and strategies to balance efficiency with meticulous adherence to hygiene protocols.

Hence, in order to significantly reduce oversight in the application of hygiene and sanitation practices, we propose several recommendations. *Firstly*, emphasizing the necessity of heightened managerial oversight in implementing these crucial practices. Within any organizational structure, management fulfills an important control function. Particularly in matters concerning hygiene and sanitation, it becomes imperative for management to earnestly and consistently undertake this responsibility. Their continuous dedication is

important to uphold and guarantee adherence to the established Standard Operating Procedures (SOPs) governing hygiene and sanitation practices. Under current EU laws, the food industry must show and confirm the functionality of a system that addresses its legal responsibilities concerning managing food safety (Drosinos, Charalambidou, & Skandamis, 2012).

*Second*, upgrading the knowledge and skills of all staff involved in pastry production in terms of hygiene and sanitation. It should be, in any organization including the pastry division in hospitality, to regularly hone and update the cognitive and affective aspects of its employees. This is related to knowledge that is always evolving or for the sake of always ensuring that employees do not forget the knowledge and skills that have been owned and mastered. Education plays a important role in enhancing food handling practices among food handlers, thereby reducing the risks of food contamination (Labović et al., 2023). While training can enhance understanding and mindset, it might not consistently result in reported changes in personal practices or behaviors (Jubayer et al., 2020). This study emphasizes the need to train individuals without prior experience and emphasizes additional training focused on behaviors for all staff to improve food safety.

*Third*, effective hygiene practices within any setting, be it a workplace, educational institution, or healthcare facility, pivot on the availability and adequacy of cleaning tools and materials. Management's responsibility extends beyond mere encouragement of employee engagement in hygiene protocols; it encompasses the proactive assurance of accessible resources crucial for executing these practices. Picture a scenario where employees are motivated and prepared to maintain cleanliness, yet the absence or insufficiency of cleaning tools impedes their efforts. It is imperative for management to prevent such occurrences by constantly monitoring and replenishing stocks of essential materials. This anticipation forms a crucial component of the controlling function within management, wherein the supervision of resources and their availability stands important. A robust supervisory system not only identifies potential shortcomings, such as the scarcity of materials, but swiftly initiates corrective measures. By streamlining this process, management ensures that any impediments hindering effective hygiene practices are swiftly addressed, fostering an environment conducive to maintaining optimal cleanliness standards.

Emphasizing food safety culture within food safety management systems is crucial. Consistently monitoring and measuring processes actively improve the behavior of those handling food, fostering continual enhancement (Frankish et al., 2021). There are five key dimensions in assessing food safety culture, encompassed to different extents by various evaluation

systems. These include values and mission, people systems, consistency, adaptability, and risk awareness (Jespersen, Griffiths, & Wallace, 2017). Assessing the food safety culture within a food company can be affected by human elements like how employees might lean towards providing socially desirable responses, indicating their inclination to answer questions in a way that presents themselves favorably to others (Jespersen, MacLaurin, & Vlerick, 2017).

## Conclusion

Ensuring proper hygiene and sanitation practices within pastry production is not just a mere routine at the four-star hotel and the five-star hotel in this current study; it is an essential cornerstone of their operational ethos. Picture a comprehensive system in place, meticulously outlined in their Standard Operating Procedures (SOPs), meticulously crafted to uphold the highest standards of cleanliness and safety. These protocols are not just about compliance; they are about weaving a culture of conscientiousness into every aspect of pastry production. Imagine staff diligently adhering to these SOPs, understanding that optimal execution of hygiene and sanitation does not just guarantee the quality of the delightful pastries served—it is a direct commitment to the well-being of every guest who savors these treats. And it does not stop there; these SOPs act as a shield against risky behaviors, reinforcing compliance with strict laws and regulations. It is about creating a holistic approach, intertwining food safety management with continuous education and training initiatives. These practices are not just about meeting standards; they are about exceeding them, maintaining health benchmarks that not only safeguard customers but also preserve the prestigious reputation of these esteemed establishments. In essence, the devotion to maintaining hygiene and sanitation in the gastronomic realms of these hotels is a testament to their unwavering commitment to excellence and care for every individual who walks through their doors.

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### **Acknowledgment**

The authors would like to extend their gratitude to PPM Telkom University for providing financial support for this research project under the Penelitian Dasar Research Program.

### **Funding Information**

None

### **Conflicting Interest Statement**

There is no conflict of interest in the publication of this article.

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