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Abstract

Food safety legislation aims to ensure food is protected from contamination and disease spread. However, in Nairobi City County, unclassified small-scale restaurants often fail to fully implement legislative directives around safe food handling. This study aimed to determine how compliance with food safety legislation affects the sustainability of safe food provision in these establishments. Guided by the Hazard Analysis and Critical Control Point (HACCP) framework, the research employed a mixed-methods approach, combining quantitative and qualitative data for a comprehensive analysis. The target population was 124 unclassified restaurants in Nairobi's Central Business District. A sample of 189 participants, including restaurant managers, supervisors, cooks, and waiters, was selected through stratified random sampling. Data collection involved semi-structured questionnaires, in-depth interviews, and observation checklists. Analysis utilized descriptive statistics, chi-square tests, and thematic content analysis. The descriptive results revealed that the majority of unclassified restaurants in Nairobi City County do not adhere to operational food safety procedures, with only 34.4% observing them. Compliance with food safety legislation, such as licensing by the Department of Public Health and the Food, Drugs and Substance Act, is also lacking, with over 60% of restaurants non-compliant. The descriptive results further showed that most restaurants lack adequate food safety surveillance and verification procedures to ensure adherence to food handling procedures. Observational checklists revealed that essential food safety compliance items like valid licenses, food safety evaluation reports, and HACCP certifications were often absent. The chi-square test demonstrated a significant association between food legislation compliance and the provision of safe food, with a chi-square of 4.544 and a p-value of .025. The study concludes that compliance with food safety legislation is crucial for ensuring the provision of safe food in unclassified restaurants in Nairobi City County. The lack of adherence

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to food safety regulations and procedures significantly impacts the safety of food provided in these establishments. Effective monitoring and enforcement of food safety standards by relevant agencies, such as the Department of Public Health, are essential for improving food safety in the hotel industry.

Keywords: *Food Legislation Compliance, Safe Food Provision, Sustainability, Unclassified, Restaurants*

1.0 Introduction

Restaurants and other food service establishments play a vital role in the food system globally, but ensuring the safety and quality of the food they provide remains an ongoing challenge, especially in developing country contexts. In regions like Africa and Asia, systemic gaps around infrastructure, hygiene knowledge, and oversight regulations have contributed to high rates of foodborne illnesses from contaminated products (FAO, 2018; Mahmoud, 2019). Kenya exemplifies many of these safety issues, ranking 81st out of 113 assessed countries in an annual Global Food Security Index analysis, with particular deficits seen in its food service hubs like Nairobi City County (GFSI, 2021; Mwangi 2018). Investigations reveal that over 70% of Kenya's frequent foodborne disease outbreaks stem from dangerous food safety shortcomings in water and cuisine served by local eateries and restaurants (Mwangi, 2018). Food safety legislation and associated regulations aim to ensure that food served by restaurants, caterers and other outlets is fit for human consumption - avoiding contamination that spreads diseases (Mahajan & Singh, 2019). In Kenya, oversight of the food sector involves multiple agencies like the Department of Public Health that conduct facility inspections under authorities like the Public Health Act (Odundo et al., 2018). Audit standards cover areas like food handler hygiene, waste management, temperature control in storage/display, water quality testing for usage and cleaning/sanitation of surfaces, equipment and utensils. However, compliance evaluations indicate that legislative directives around safe food provision are not fully followed within Nairobi City County (Mwangi, 2018; Malavi et al., 2017). This suggests critical gaps in translating national food safety priorities to on-the-ground implementation.

Despite legal frameworks like the EU's General Food Law and Kenya's focus on compliance, food safety in Nairobi suffers from inadequate infrastructure, knowledge gaps, and weak enforcement (Adebitan, 2011; Fasoro et al., 2016; Chekol et al., 2019). Upgrading regulations, training food handlers, and providing targeted infrastructure/technology support can incentivize compliance beyond penalties (Moreb et al., 2017; Auad et al., 2019). Additionally, stricter enforcement with increased resources and steeper fines can deter non-adherence (Seaman, 2010). Enhanced domestic safety standards not only protect citizens but also open doors for trade partnerships and global best practice sharing (Capone et al., 2014). By prioritizing compliance, Nairobi can transform its food safety landscape and contribute to national goals like nutritional access and export competitiveness. Guaranteeing safe food isn't just about preventing illnesses; it's a critical part of building sustainable and equitable societies (Jaffee et al., 2018). Global frameworks like the UN SDGs recognize this, prioritizing food safety for all, particularly in vulnerable regions (Capone et al., 2014; Arshad & Shafqat, 2012). However, challenges like poor infrastructure, inadequate handling practices, and lack of awareness disproportionately impact low-income communities and informal vendors (Omofunmi et al., 2020). Sustainable solutions require culturally sensitive initiatives, strong inter-agency collaboration, and holistic support for all players in the food chain, from rural farmers to urban restaurants (WHO, 2020). Investing in effective food safety practices offers a win-win: healthier citizens, stronger economies, and empowered communities (El Bilali et al., 2019). By prioritizing food safety sustainability, Nairobi City County could be a beacon for national transformation, demonstrating the power of food safety for all.

Unclassified food stalls, a ubiquitous feature in Nairobi, pose significant health risks due to lax regulations and informal practices. Comprising over 70% of the city's food service, these vendors operate without official hygiene ratings, endangering consumers with contaminated water, reused utensils, and uncontrolled food handling (WHO, 2018; Malavi et al., 2017). While offering convenience and affordability, their unregulated business model undercuts responsible actors and hinders food safety modernization efforts (Chekol et al., 2019). Addressing these challenges requires a multi-pronged approach: incentivize vendors to formalize through streamlined registration and resource assistance, educate consumers about risks, and implement stricter regulations in phases to ensure equity and compliance (Mahmoud, 2019; Jeinie et al., 2016). Only then can Nairobi's food landscape truly thrive, balancing accessibility with public health.

1.4 Statement of the Problem

Food safety remains a major global public health concern, with an estimated 600 million foodborne illnesses and 420,000 deaths annually attributed to consuming unsafe food (World Health Organization, 2019). The problem is particularly acute in developing countries like Kenya, where inadequate regulatory oversight and weak enforcement of food safety legislation among unclassified food establishments, such as small restaurants, contribute to the issue (Patil et al., 2005). In Nairobi City County, Kenya, the lack of rigorous standard checks has led to significant food safety risks in unclassified restaurants, resulting in persistent outbreaks of foodborne diseases (World Health Organization, 2021; Nairobi Health Department, 2021). This has been linked to non-compliance with established food safety regulations and poor adoption of proper hygiene and handling practices (Malavi et al., 2017). Despite the existence of various food laws and guidelines at the national level, a lack of awareness, inadequate resources, and weak enforcement hinder compliance among unclassified restaurants in Nairobi (Mwangi, 2018; Kenya Hotel Industry Report, 2019). Additionally, reliance on casual, untrained labor often compromises safe food handling capacities (Amoke, 2014; Kenya Hotel Industry Report, 2019). These challenges highlight the need to identify specific legislative facilitators and barriers that influence compliance and, ultimately, the sustainability of safe food provision. The study therefore sought to determine the effect of food legislation compliance on the ability of unclassified restaurants in Nairobi City County to sustainably provide safe food.

1.5 Objective of the study

The purpose of the study was to determine the effect of food legislation compliance on safe food provision for sustainability by unclassified restaurants in Nairobi City County.

2.0 Literature Review

This section presents the theoretical review and the empirical review.

2.1 Theoretical Review

This study is guided by the Hazard Analysis and Critical Control Point (HACCP) framework, an internationally recognized food safety management system focused on the identification, evaluation, and control of hazards to ensure food is safe for consumption (Mortimore & Wallace, 2019). The HACCP system outlines a preventative, systematic approach to managing food safety through the following principles: conducting a hazard analysis, determining critical control points, establishing critical limits, implementing monitoring procedures, corrective actions, verification processes, and record-keeping (Sperber & Stier, 2019). The value of the HACCP framework for this research is its applicability in assessing and improving food handling practices to minimize food safety risks. As Akabanda, Hlortsi, & Owusu-Kwarteng

(2019) discuss, adopting HACCP enables organizations across the food industry, including restaurants, to effectively control hazards and comply with safety regulations. For unclassified restaurants in Nairobi City County struggling with contamination and foodborne illnesses due to non-compliance (WHO, 2021; Nairobi Health Department, 2021), implementing HACCP principles can strengthen their food safety management. Specific aspects of the framework relevant to this study context include using hazard analysis to identify and control biological, chemical and physical food safety threats prevalent in restaurants, establishing monitoring and corrective procedures, and maintaining verification and record-keeping for continuous improvement (Anandappa, 2013; McClusky, 2004).

By integrating these HACCP controls into food preparation, storage and handling activities, unclassified restaurants can minimize pathogens, separate raw and cooked ingredients, store foods at safe temperatures, and prevent cross-contamination (Soman & Raman, 2016). However, barriers like inadequate resources, training and awareness may impede effective HACCP adoption by unclassified restaurants in this region (Mensah & Julien, 2020). To facilitate implementation, regulatory bodies and community stakeholders need capacity-building initiatives to educate and support these restaurants in developing food safety infrastructure and skills aligned with HACCP (Akabanda, Hlortsi, & Owusu-Kwarteng, 2019). Still, proper integration of this food safety system can significantly progress Nairobi City County towards safe, sustainable food provision. The HACCP framework thus provides an evidence-based theory and practical guideline for assessing and enhancing food management in unclassified restaurants to reduce hazards and improve legislative compliance towards public health protection.

2.2 Empirical Review

Food legislation compliance is a critical aspect of ensuring safe food provision for consumers. Governments worldwide have established food safety regulations and guidelines to prevent foodborne illnesses and protect public health. In the European Union, for example, the General Food Law (Regulation (EC) No 178/2002) establishes the primary framework for food safety, incorporating principles such as traceability, risk analysis, and the precautionary principle (European Commission, 2022). In the United States, the Food Safety Modernization Act (FSMA) of 2011 aims to enhance food safety by shifting the focus from responding to contamination incidents to preventing them (U.S. Food and Drug Administration, 2021). These legislations underline the importance of food safety and provide a clear framework for food manufacturers, retailers, and other stakeholders in the food supply chain to comply with and ensure safe food provision. A significant component of food legislation compliance involves Hazard Analysis and Critical Control Points (HACCP), which is an internationally recognized system for reducing the risk of foodborne illnesses. HACCP focuses on the identification, evaluation, and control of hazards in the food production process (Codex Alimentarius Commission, 2020). The successful implementation of HACCP systems requires ongoing monitoring, verification, and documentation, ensuring that food safety measures are effective and continuously maintained (Motarjemi & Lelieveld, 2019). Consequently, HACCP systems are considered a cornerstone of food safety management and a vital tool for achieving food legislation compliance.

An examination of safety of food in Brazilian restaurants that are popular and public observed that food safety policies related no correlation with self-reported practices and knowledge of food safety and according to handlers of food practices as well as knowledge (Souza, Azevedo & Jucá, 2018). However, the study focused on restaurants in Brazil whose operating environment and food legislation guidelines might be different from those in Kenya hence the need to conduct this study. By practical use of the HACCP system of management in the hotel

catering industry, the number of bacteria greatly decreased and the rate of pass of tableware disinfection increased remarkably in the food processing links of the hotel, while consumers' satisfaction improved greatly according to the investigation of safety management based on hotel management as well as quality of food (Shi, 2017). Therefore, the HACCP management system had great applicability in enhancing safety of hotels and the quality of food.

Oduol (2020) studied the role of food management systems on food safety in 5-star rated hotels in Nairobi City County. The study adopted cross-sectional survey design. Nairobi City County has several classified hotels located conveniently and the research surveyed 5-star hotels. Data were collected using questionnaires, interview schedule and observation checklist. It was also established that compliance to food safety system had positive and statistically significant relationship with food safety. Further, implementation of food safety system had a positive and statistically significant relationship with provision of safe food in Nairobi City County. Oloo, (2010) also investigated food safety and quality management in Kenya. Most Kenyan standards are adopted from international ones, such as International Organization for Standardization (ISO) and Codex Alimentarius Commission (CAC). Locally, there is the Kenya Bureau of Standards. Despite the existing legal framework for food safety and quality controls, some processed food products in the Kenyan market are of sub-standard quality.

Mutua (2021) studied the role of food management systems on food safety in hotels. The paper used a desk study review methodology where relevant empirical literature was reviewed to identify main themes and to extract knowledge gaps. The study found out that application of standard food safety systems, compliance to food safety system and implementation of food safety system impact the provision of safe food in hotels. Food legislation compliance is a critical factor in ensuring safe food provision, as it sets the standards and guidelines for food production, processing, and distribution. Adherence to these regulations helps to minimize the risk of foodborne illnesses and improve public health outcomes (Codex Alimentarius Commission, 2020). Empirical research examining the relationship between food legislation compliance and safe food provision provides valuable insights into the effectiveness of regulatory frameworks in promoting food safety.

A study by Gomes et al. (2019) analyzed the impact of food safety legislation compliance on the prevalence of foodborne pathogens in food processing plants. The results demonstrated a significant reduction in the presence of harmful microorganisms, such as *Listeria monocytogenes* and *Salmonella*, in facilities that complied with food safety regulations. This research emphasizes the importance of enforcing food legislation to ensure safe food provision and minimize the risk of foodborne illnesses (Gomes et al., 2019). Another study by Luning et al. (2020) found that compliance with food safety regulations could enhance the overall food safety culture within an organization, further contributing to the provision of safe food. Ensuring food legislation compliance can be challenging, as it requires effective collaboration between food safety authorities, food producers, and other stakeholders. Governments and food safety agencies must invest in robust inspection and monitoring systems, provide guidance and support to food producers, and enforce penalties for non-compliance (Kher et al., 2020). By doing so, they can create a supportive environment that encourages adherence to food safety regulations, ultimately promoting safe food provision and protecting public health.

3.0 Methodology

The study employed a mixed methods research design combining quantitative and qualitative data. This allowed a comprehensive analysis of the research problem by triangulating results. The target population was 124 unclassified restaurants at Nairobi Central Business District (CBD), from which 40 restaurants were purposively selected for sampling. The unit of analysis included 1 restaurant manager, 2 supervisors, 3 cooks and 3 waiters from each restaurant. The

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sample size was calculated at 189 participants, comprising 21 managers, 42 supervisors, 63 cooks and 63 waiters selected using stratified random sampling. Data was collected quantitatively through self-administered semi-structured questionnaires to supervisors, cooks and waiters. Qualitative data was gathered via face-to-face interviews with managers and on-site observation checklists of selected restaurants. Tools used included restaurant staff questionnaires with open and closed-ended questions, interview schedules for managers, and an observational checklist of facilities, processes and practices. Quantitative data was analyzed with descriptive statistics, t-tests and chi-square tests; qualitative data underwent thematic content analysis. Results were compared and triangulated to achieve integrated interpretations addressing all research objectives.

4.0 Findings and Discussion

The response rate for the study was 78.9%, comprising 136 returned questionnaires out of 168 distributed to restaurant staff, along with interviews with 21 out of 21 managers. This exceeds the adequacy threshold for analysis.

4.1 Food legislation compliance

The objective was to determine the effect of food legislation compliance on safe food provision for sustainability by unclassified restaurants in Nairobi City County. The objective was analysed by employing descriptive statistics and inferential analysis. Hypothesis testing was also conducted in this section.

4.1.1 Descriptive statistics

The study sought to determine the effect of food legislation compliance on safe food provision for sustainability by unclassified restaurants in Nairobi city county. The participants of the study responded on statements related to food legislation compliance. Result findings were presented in Table 1.

Table 1: Food Legislation Compliance

Food legislation compliance items	No		Yes	
	f	%	f	%
Operational food safety procedures are observed by all hotel staff	103	65.6%	54	34.4%
This restaurant is periodically assessed and licensed by the Food, drugs and substance Act are	101	64.3%	56	35.7%
This restaurant is registered and licensed by the Department of Public Health	90	57.3%	67	42.7%
This restaurant is licensed and registered by National Food Safety Authority	95	60.5%	62	39.5%
Food safety surveillance in this restaurant is implemented according to the specific legal provision	105	66.9%	52	33.1%
There are clear procedures for verification to confirm that food safety handling procedures are observed.	97	61.8%	60	38.2%
There is proper documentation concerning all food safety procedures and records in this restaurant	105	66.9%	52	33.1%

It was found that majority 65.6% of restaurant workers did not observe operational food safety procedures are observed by all hotel staff with only 34.4% observeing. The restaurant is not periodically assessed and licensed by the Food, drugs and substance Act are as indicated by 64.3% of the respondents. Only 35.7% of the restaurants were periodically assessed and

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licensed by the Food, drugs and substance Act. Regarding, registration of restaurants and licensing by the Department of Public Health, majority of the restaurants 57.3% did not abide by these while 42.7% abide by it. Likewise, majority 60.5% of the respondents indicated that the restaurants are not licensed and registered by National Food Safety Authority while 39.5% of the restaurants were licensed and registered by National Food Safety Authority.

It was also established that food safety surveillance in the restaurant are not implemented according to the specific legal provision as indicated by 66.9% of the respondents. Only 33.1% of the restaurant's food safety surveillance in the restaurant are implemented according to the specific legal provision. The study results also indicated that there are no clear procedures for verification to confirm that food safety handling procedures are observed as indicated by 61.8% of the respondents while 38.2% of the restaurants had clear procedures for verification to confirm that food safety handling procedures are observed. Further, it was indicated that 66.9% of the restaurants did not have proper documentation concerning all food safety procedures and records in this restaurant while only 33.1% had. Observation Checklist in Table 4.10 shows the observation checklist results regarding food legislation compliance.

Table 2: Observation Checklist: Food legislation Compliance

Food legislation compliance items	Not available %	Available %
Food safety evaluation reports from the Department of Public Health	62.1%	37.9%
Valid license on Food, drugs and substance	58.9%	41.1%
Up to date license from National Food Safety Authority	54.8%	45.2%
Proper documentations of food safety guidelines and procedures pinned on the restaurant's wall	59.7%	40.3%
Food certification from KEBS	65.3%	34.7%
HACCP certification	66.9%	33.1%
Certification from Nairobi County Government	60.5%	39.5%
Certification from food board	61.3%	38.7%

The observation checklist 3 indicates that most of the food legislation compliance items were unavailable in most hotel restaurants. It was observed that food safety evaluation reports from the Department of Public Health, valid license on Food, drugs and substance, up to date license from National Food Safety Authority, proper documentations of food safety guidelines and procedures pinned on the restaurant's wall, food certification from KEBS, HACCP certification, certification from Nairobi County Government and certification from Kenya food board were not available in most unclassified restaurants. KII 7 noted:

"...This restaurant has complied with majority of food safety legislation and acts. Currently, the restaurant is fully compliant with Food, drugs and substance Act, Department of Public Health, National Food Safety Authority". [KII 7, 2021)

However, KII 5 indicated:

"...The restaurant has not updated the food safety guidelines as proposed by Food, drugs and substance Act, Department of Public Health, National Food Safety Authority. I have not seen or heard of management communicate any changes in food safety handling procedure guidelines and requirements". [KII 6, 2021).

4.1.2 Relationship between food legislation compliance and safe food provision by unclassified restaurants

Chi square test was employed to determine the relationship between food legislation compliance and safe food provision by unclassified restaurants. The hypothesis was tested using p-value calculated. The acceptance/rejection criterion is that, if the $p\text{-value} > 0.05$, we fail to reject the $H_3 < 0.05$, the H_0 is rejected. The null hypothesis (H_3) was that there is no significant relationship between food legislation compliance and safe food provision by unclassified restaurants in Nairobi City County. Table 3 shows the Chi square test regarding the association between food legislation compliance and safe food provision by unclassified restaurants.

Table 3: Cross tabulation between Food legislation compliance and safe food provision by unclassified restaurants

			Safe food provision by unclassified restaurants		Total
			No	Yes	
Food legislation compliance	No		30	48	78
	Yes		18	61	79
Total			48	109	157
		(χ)	4.544		
Chi-square		P-value	.025		

It was established that food legislation compliance and safe food provision by unclassified restaurants have a significant association. The influence of food legislation compliance on safe food provision by unclassified restaurants was statistically significant as supported by a chi square of 4.544 and a reported p value of $.025 < 0.05$. The implication of this is that the food legislation compliance by unclassified restaurants have significant influence on safe food provision by the restaurants.

4.1.3 Hypothesis testing for food legislation compliance

The hypothesis was tested using the chi square results as shown in Table 3. The study sought to test the given null hypothesis:

H_{03} : There is no significant relationship between food legislation compliance and safe food provision by unclassified restaurants in Nairobi City County.

The p value calculated was $.025 < 0.05$. The results thus imply that food legislation compliance significantly influences safe food provision by unclassified restaurants. The null hypothesis was rejected and alternative hypothesis accepted that there is significant relationship between food legislation compliance and safe food provision by unclassified restaurants.

5.0 Conclusion

Study results indicated that food legislation compliance has significant influence on safe food provision by unclassified restaurants. Observance of food safety regulation, guidelines and procedures impact the provisions of safe food in restaurants. It is thus concluded that adherence to food safety legislations by unclassified restaurant is paramount in the quest for safe food provision in the hotel industry. In Kenya, various agencies are in charge of food safety and that regularly monitor food establishments for the food safety measures that they should put in place and work by always. The agencies include the Department of Public Health, which is domiciled within the Ministry of Public Health and Sanitation of Kenya. There are various pieces of legislation in Kenya relating to the measures. These include the Food, Drugs and Substances Act of Kenya, the Public Health Act of Kenya, and the Meat Control Act of Kenya.

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