

Level of Awareness and Constraints of Service Crews and Managerial Support on Food Safety and Sanitation Enhancement

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Publication history:

Received: September 10, 2026

Revised: October 8, 2026

Accepted: October 11, 2026

Published: October 12, 2026

International Journal of Sustainable and Integrated Studies, Vol. 1, No. 3, pp. 388–394, October 2026.

Abstract

Food safety and sanitation are essential to public health and effective restaurant operations. This study assessed service crews' awareness of food safety and sanitation, operational constraints, and managerial support in selected restaurants in Ormoc City, Leyte, as a basis for proposing enhancement measures. Anchored in the Theory of Planned Behavior and the Knowledge-Practice Framework, the study employed a quantitative descriptive research design involving 100 service crews selected through purposive sampling from ten restaurants. Data were collected using a researcher-made questionnaire and analyzed through descriptive statistics, including frequency, percentage, mean, and weighted mean. Findings revealed a high level of food safety awareness (4.86, Strongly Agree) and managerial support (4.52, Strongly Agree). Operational constraints received an overall mean of 3.15 (Neutral), with additional training identified as the most prominent concern (3.64, Agree). Although respondents demonstrated substantial awareness and favorable perceptions of managerial support, challenges remained in maintaining cleanliness during busy hours, following established procedures, and ensuring adequate sanitation resources. The study recommends regular training, strengthened supervision and compliance monitoring, sufficient sanitation supplies, and continuous managerial feedback. The findings align with Sustainable Development Goals 3 (Good Health and Well-Being), 8 (Decent Work and Economic Growth), and 12 (Responsible Consumption and Production) by emphasizing food safety, safer working conditions, and responsible sanitation practices. The proposed measures may contribute to institutional and social sustainability by strengthening workplace hygiene management, supporting employee development, and promoting safer food service operations.

Keywords: Food Safety Awareness; Food Safety Training; Managerial Support; Operational Constraints; Restaurant Service Crews; Sanitation Practices; Sustainable Development Goals

1. Introduction

Food safety and sanitation are essential to protecting public health and maintaining safe food service operations. Despite established regulations, improper food handling, inadequate sanitation, operational constraints, and inconsistent managerial supervision remain challenges. In Ormoc City, Leyte, understanding service crews' awareness, workplace constraints, and managerial support is necessary to identify appropriate food safety enhancement measures. This study examines these three areas to provide a basis for improving sanitation practices and strengthening food safety management in selected food service establishments.

Foodborne illnesses remain a global public health concern. The World Health Organization (WHO) estimated approximately 866 million illnesses and 1.52 million deaths annually due to unsafe food. Proper food handling, personal hygiene, storage, and sanitation are therefore essential in preventing contamination. However, Pascual et al. (2019) found that satisfactory food safety knowledge among food handlers in Eastern Visayas did not consistently translate into safe practices. Similarly, Rene Jun B. Belgica (2024) identified inconsistencies between food safety knowledge and its application among street food vendors. These findings emphasize the importance of continuous education, monitoring, and workplace support.

Food safety compliance depends on employee awareness, available resources, and managerial supervision. As Angelica P. Lazaro, Ana Mae C. Pinson, et al. (2025) reported, effective hygiene management and regular supervision improved employee compliance. Gerlie Shane, D.C. Blanca, et al. (2025) similarly emphasized the importance of employee attitudes, training, and sanitation monitoring. However, Daisy Lily Moscare-Balanquit & Jane Dolon-Sanoria (2021) identified inadequate supplies, management-related factors, and personal behavior as barriers to safe food preparation. De Freitas et al. (2022) and Yurii Bezruchenko and Galina Schuka (2024) further highlighted inconsistent supervision and hygiene practices. Research Publish Journals (2022), Brown et al. (2014), and Hal King (Springer Science & Business Media, 2013) emphasized structured training, managerial involvement, resource allocation, and continuous monitoring as essential components of effective food safety management.

In the Philippines, Republic Act No. 10611 and Presidential Decree 856 provide regulatory foundations for food safety and sanitation. Nevertheless, approximately 9 million foodborne illness cases are estimated annually. Noelah Mae D. Borbon (PhD) and Melinda Tolentino (2020) identified generally satisfactory compliance among food establishments, although violations persisted. Research published in the Asia-Pacific Journal of Innovation in Hospitality and Tourism APJIHT (2019) emphasized proper food handling and sanitation among ambulant vendors (Mohan, 2006), while April M. Perez and Abigail I. Manzano (2017) highlighted continuous employee training in hospitality establishments. Internationally, Crim & Odeyemi (2019) emphasized sanitation compliance, while Li Bai, Mingliang Wang, et al. (2019) examined consumer perceptions of restaurant safety. Danica L. Gay, Marc Lexter A. Joaquin, et al. (2022) also highlighted management commitment to appropriate restaurant facilities. In Ormoc City, existing research on food stall owners provides limited evidence concerning service crews' constraints and managerial support.

The study is anchored in the Theory of Planned Behavior developed by Icek Ajzen (1991) and the Knowledge-Practice Framework. The former explains behavior through attitudes, subjective norms, and perceived behavioral control, while the latter emphasizes the relationship between knowledge and actual practices. These frameworks support examining how service crews' awareness, operational constraints, and managerial support relate to food safety and sanitation. Using an input-process-output framework, the study considers service crews and managers, their awareness, constraints, and managerial support as inputs; questionnaire administration and descriptive statistical analysis as processes; and proposed food safety and sanitation enhancement measures as outputs.

Existing studies primarily examine food safety knowledge, employee hygiene, regulatory compliance, and managerial practices separately. Limited research integrates service crews' awareness, operational constraints, and managerial support within selected food service establishments in Ormoc City. This study addresses the gap by determining the levels of awareness and constraints concerning food safety and sanitation, assessing managerial support, and proposing appropriate enhancement measures. Its findings are intended to guide improvements in training, supervision, resource availability, and workplace sanitation.

The study aligns with SDG 3 (Good Health and Well-Being) by supporting the prevention of foodborne illnesses through improved food safety practices. It also relates to SDG 8 (Decent Work and Economic Growth) by emphasizing safer workplace conditions, employee training, and managerial support. Additionally, SDG 12 (Responsible Consumption and Production) is relevant through proper food handling, sanitation, and waste management. These alignments reflect the potential contributions of improved food service practices to public health and responsible operations.

The study contributes to public health, institutional, and socioeconomic sustainability by emphasizing safe food handling, employee awareness, and effective managerial support. Addressing workplace constraints and strengthening sanitation management may improve regulatory compliance, employee working conditions, and consumer protection. The proposed enhancement measures may help food service establishments in Ormoc City maintain safer, more consistent, and responsible operations while supporting long-term public health and organizational sustainability.

2. Material and methods

2.1 Research Design

The study employs a quantitative descriptive research design to assess service crews' awareness of food safety and sanitation, constraints encountered in implementing proper practices, and managerial support provided by restaurant managers. Data are gathered through a researcher-made survey questionnaire and analyzed using frequency, percentage, mean, and weighted mean to describe respondents' assessments and identify areas requiring improvement.

2.2 Locale of the Study

The study is conducted in selected restaurants in Ormoc City, Leyte, which accommodate residents and visitors through various food service establishments. The location provides an appropriate setting for examining food safety awareness, operational constraints, and managerial support across different restaurant environments. Ten restaurants representing different types of dining establishments are identified for data collection.

2.3 Respondents of the Study

The respondents comprise restaurant managers and service crews from selected restaurants in Ormoc City, Leyte. Managers provide information regarding training, supervision, guidance, and managerial support, while service crews report their awareness, operational constraints, and food safety and sanitation practices. The study identifies 100 service crews from small, medium, and large restaurant establishments to represent different workplace conditions.

2.4 Sample and Sampling Procedure

Purposive sampling is employed to select respondents directly involved in restaurant food safety and sanitation operations. Eligible participants must be restaurant managers or service crew members currently employed in Ormoc City, at least 18 years old, employed for a minimum of three months, and willing to participate voluntarily. Individuals who do not meet these qualifications are excluded from the study.

2.5 Research Instrument

A researcher-made questionnaire is used to assess food safety awareness, operational constraints, and managerial support and strategic practices. The instrument consists of three sections covering food safety knowledge, challenges in food safety and sanitation, and managerial support and recommendations for improvement. Its content undergoes expert validation by professionals in hospitality management, food safety, and research methodology, followed by pilot testing among individuals with characteristics similar to the target respondents. Instrument reliability is assessed using Cronbach's Alpha, yielding coefficients of 0.813 for Food Safety Awareness, 0.880 for Constraints in Food Safety and Sanitation, and 0.760 for Managerial Support and Strategic Practices, indicating satisfactory internal consistency. Responses are measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

2.6 Data Gathering Procedure

The researchers seek approval from the Dean of the School of Tourism and Hospitality Management and obtain permission from the managers or owners of ten selected restaurants. Following instrument validation, eligible respondents are informed of the study's objectives and their rights before providing voluntary informed consent. Questionnaires are personally administered, collected, and checked for completeness. Responses are subsequently coded, organized, and encoded without personal identifiers to maintain confidentiality and prepare the data for statistical analysis.

2.7 Data Analysis Techniques

Data are analyzed using frequency, percentage, mean, and weighted mean to determine service crews' levels of awareness and constraints and the extent of managerial support concerning food safety and sanitation. Frequency and percentage describe response distributions, while the mean and weighted mean summarize respondents' assessments across the study indicators. The weighted mean is interpreted using the five-point scale presented in Table 1. Scores ranging from 4.21–5.00 indicate Strongly Agree, 3.41–4.20 indicate Agree, 2.61–3.40 indicate Neutral, 1.81–2.60 indicate Disagree, and 1.00–1.80 indicate Strongly Disagree. These classifications facilitate comparison across food safety awareness, operational constraints, and managerial support indicators. The results

serve as the basis for identifying areas requiring improvement and formulating food safety and sanitation enhancement measures.

2.8 Ethical Considerations

The study follows ethical principles of autonomy, beneficence, justice, non-discrimination, privacy, and confidentiality. Participants are informed of the study's academic purpose, procedures, and their right to refuse or withdraw without penalty. Voluntary informed consent is obtained, and respondents are treated fairly regardless of personal characteristics. No experimental interventions are introduced, and collected information is coded and handled confidentially to protect participants' identities and welfare.

3. Results and Discussion

3.1 Service Crews' Awareness of Food Safety and Sanitation

3.1.1 Awareness of Proper Food Safety and Sanitation Practices

The findings revealed a high level of food safety awareness among service crews, with an overall weighted mean of 4.86 (Strongly Agree). Proper handwashing procedures received the highest rating (4.90), followed by waste disposal (4.89). Awareness of food storage temperatures and workplace cleanliness both obtained 4.85, while separating raw and cooked foods to prevent cross-contamination received 4.81. All indicators were interpreted as Strongly Agree, demonstrating respondents' substantial awareness of essential food safety and sanitation procedures. These findings support Lazaro, Pinson et al. (2025), who emphasized the importance of employee hygiene management in improving food safety practices. Similarly, Belgica (2024) reported high food safety knowledge among food handlers, particularly in hand sanitation and proper food handling. However, Belgica (2024) also emphasized that awareness does not necessarily ensure consistent application, highlighting the importance of continuous training and managerial support.

3.2 Constraints Encountered by Service Crews in Food Safety and Sanitation

3.2.1 Operational Challenges and Training Needs

Service crews reported an overall weighted mean of 3.15 (Neutral) regarding constraints in implementing food safety and sanitation practices. The need for additional training received the highest rating (3.64, Agree), followed by difficulty maintaining cleanliness during busy periods (3.22, Neutral) and following food safety procedures during peak working hours (3.14, Neutral). Inadequate equipment (2.91) and insufficient sanitation supplies (2.83) received the lowest ratings, both interpreted as Neutral. These findings identify additional training as the most prominent reported concern. The results align with Moscare-Balanquit and Dolon-Sanoria (2021), who identified resource availability and management-related factors as influences on safe food preparation. Belgica (2024) similarly emphasized continuous training to strengthen food safety practices, while De Freitas et al. (2022) highlighted the importance of managerial guidance, supervision, and reinforcement. These findings suggest that additional training and improved workplace support may help address the constraints reported by service crews.

3.3 Managerial Support for Food Safety and Sanitation Enhancement

3.3.1 Training, Resource Provision, and Compliance Monitoring

Managerial support obtained an overall weighted mean of 4.52 (Strongly Agree), indicating favorable assessments among respondents. The availability of cleaning materials and sanitation supplies received the highest rating (4.65), followed by reinforcement of proper food handling practices (4.62), employee training (4.58), and regular monitoring of food safety and sanitation practices (4.56). Monitoring compliance with established food safety procedures obtained the lowest mean (4.19, Agree), identifying an area for further improvement. These findings are consistent with Lazaro, Pinson, et al. (2025), who reported improved food safety compliance among employees receiving regular managerial guidance. The FoodSHAP training study (2022) likewise emphasized continuous supervision, reinforcement, and organizational support in sustaining safe practices. Similarly, De Freitas et al. (2022) highlighted the importance of managerial follow-up and consistent supervision. The findings indicate that managerial support is favorably perceived, although compliance monitoring could be strengthened.

3.4 Proposed Food Safety and Sanitation Enhancement Measures

3.4.1 Training and Operational Sanitation Improvement

Based on the findings, the proposed enhancement program prioritizes regular food safety training, refresher sessions, structured cleaning schedules during peak working hours, and clearly assigned sanitation responsibilities. Additional measures include food safety checklists and visible hygiene reminders covering handwashing, food handling, workplace cleanliness, and waste disposal. These proposed strategies address the reported need for additional training and the challenges associated with maintaining sanitation during busy operations. The proposed measures are intended to reinforce existing awareness and encourage consistent application of food safety procedures. Structured training and operational guidance may help service crews maintain appropriate practices under varying workplace conditions. Their effectiveness, however, remains to be evaluated because the study presents these measures as recommendations rather than implemented interventions.

3.4.2 Resource Availability, Managerial Supervision, and Evaluation

The proposed program also emphasizes adequate equipment, consistent sanitation supplies, strengthened managerial monitoring, and regular performance evaluation. Managers are encouraged to provide guidance and constructive feedback to address identified constraints and reinforce compliance with established food safety and sanitation procedures. Evaluation activities include workplace inspections, compliance monitoring, and feedback from service crews and managers. These measures respond to the comparatively lower rating for managerial compliance monitoring and the reported operational constraints. Strengthening supervision, resource management, and feedback mechanisms may support more consistent food safety practices and provide a basis for continuous workplace improvement. The proposed program aims to enhance food safety awareness, reduce operational difficulties, and strengthen managerial support in selected restaurants in Ormoc City.

4. Conclusion & Recommendations

The study revealed that service crews in selected restaurants in Ormoc City demonstrated a high level of food safety and sanitation awareness, with an overall mean of 4.86, and received substantial managerial support, with a mean of 4.52. Despite these favorable results, operational constraints remained, particularly in maintaining cleanliness during busy hours, consistently following food safety procedures, and accessing adequate training and sanitation resources. The findings emphasize that awareness alone is insufficient to ensure consistent food safety practices without continuous managerial guidance, supervision, and adequate workplace resources. Strengthening these areas is essential to improving food safety compliance and maintaining safe and sanitary restaurant environments.

Restaurant managers should conduct regular food safety and sanitation training and refresher sessions focusing on proper handwashing, cross-contamination prevention, food storage, and workplace hygiene. Monitoring and supervision should be strengthened, particularly during peak operating hours, while adequate cleaning materials, protective equipment, and sanitation supplies should be consistently provided. Managers should also maintain clear communication, continuous guidance, and regular feedback to reinforce proper practices. Future researchers are encouraged to incorporate direct observation and interviews with service crews and managers to obtain a more comprehensive understanding of food safety practices, operational constraints, and managerial support.

The study was limited to 100 service crews from selected restaurants in Ormoc City, Leyte, restricting the generalizability of its findings to other food service establishments and geographical locations. Its quantitative descriptive design relied primarily on self-reported questionnaire responses, which may not fully reflect actual workplace practices or managerial support. Furthermore, the study focused on service crews' awareness, operational constraints, and managerial support without directly observing food safety and sanitation practices. These limitations indicate the need for future investigations incorporating observational and interview-based methods to provide a more comprehensive assessment of food safety and sanitation in restaurant operations.

5. Compliance with ethical standards

The study involved restaurant managers and service crews from selected food service establishments in Ormoc City, Leyte, with institutional permission sought from the School of Tourism and Hospitality Management. Participation was voluntary, informed consent was obtained, and data were collected through non-invasive survey questionnaires while maintaining confidentiality and excluding personally identifying information from the research data. The manuscript does not specify any conflicts of interest or external funding sources.

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