

Assessing Food Safety Knowledge, Attitudes, and Practices of Street Food Vendors

Ryan O. Tayco*, Vicente B. Cañete, John Dino Bulfa, Alssay Marie Ege,
Ellah Noblefranca, May Ann Remollo
Negros Oriental State University, Dumaguete City, Philippines

*Corresponding Author Email: ryantayco@norsu.edu.ph

Date received: May 1, 2025

Date revised: May 21, 2025

Date accepted: June 20, 2025

Originality: 98%

Grammarly Score: 99%

Similarity: 2%

Recommended citation:

Tayco, R., Cañete, V., Bulfa, J. D., Ege, A. M., Noblefranca, E., & Remollo, M. A. (2025). Assessing food safety knowledge, attitudes, and practices of street food vendors. *Journal of Interdisciplinary Perspectives*, 3(7), 376-387. <https://doi.org/10.69569/jip.2025.339>

Abstract. This survey assessed street food vendors' food safety knowledge, attitudes, and practices in Rizal Boulevard, Dumaguete City. This study used quantitative research utilizing survey methodology. The researchers used purposive sampling to select 50 vendors as the study's respondents based on their location and street food sales. Findings revealed that most street food vendors were females between 41 and 50, and married. The street food vendors received food safety training and had been in the street food vending business for several years. Despite variations in socio-demographic factors, the respondents displayed an extremely knowledgeable level of food safety knowledge and exhibited a positive attitude towards food safety. However, their adherence to food safety practices in their operations was consistent. For challenges, poor food safety practices were noted in water use, lack of access to safe water, unregulated street vending practices, inadequate waste disposal, and the need for proper facilities. The study emphasized the moderate positive correlation between food safety knowledge and adherence to food safety practices. Findings suggest that higher levels of food safety knowledge, strong positive attitudes, and better practices contribute to better handling challenges in the street food vending sector. To enhance street food vendors' food safety knowledge and practices, several interventions are put forward to support and achieve comprehensive food safety training programs that address the identified gaps. Initiatives could focus on providing accessible and practical training, providing access to safe water and proper waste disposal facilities, and creating awareness about safe food vending practices. Further, collaboration and engagement of relevant stakeholders are essential to create a supportive environment that enables street food vendors to enhance their food safety knowledge, attitudes, and practices. By improving food safety standards, street food can be improved, ensuring the well-being of both vendors and customers.

Keywords: Food safety; Knowledge; Attitudes; Practices; Street vendors.

1.0 Introduction

Street food vendors are a beloved part of many cultures, dishing out affordable, flavorful, and convenient meals that unite people. However, ensuring street food safety is a pressing issue, as vendors often operate in open-air settings with limited access to clean water, refrigeration, or proper sanitation, which can lead to foodborne illnesses. This study zeroes in on the food safety knowledge, attitudes, and practices of street food vendors along Rizal Boulevard in Dumaguete City, a lively tourist destination famous for its scenic coastal views and vibrant evening food stalls serving local favorites like tempura and squid balls. The driving force behind this research is a commitment to making street food not only delicious and accessible but also safe, protecting public health, and giving customers confidence in every bite.

Numerous studies worldwide underscore the challenges of street food safety. Research from Ghana, India, and Nigeria reveals that many street food vendors lack adequate food safety knowledge, have indifferent attitudes toward hygiene, and engage in poor handling practices, all of which heighten the risk of foodborne illnesses (Ahmed et al., 2024; Sharma et al., 2018; Donkor et al., 2017). Argente et al. (2024) study examined food safety knowledge, attitudes, and practices among street food vendors in Batangas City, Philippines, and found that while vendors had good attitudes toward food safety, these did not always translate into proper practices. A localized study by Tayco et al. (2024) around Negros Oriental State University in Dumaguete City found that food handling practices—such as personal hygiene, food preparation, and storage—significantly influence consumers' perceived risks and buying behavior. Their research, involving 1,382 students, showed that poor hygiene practices increase perceived risks, affecting whether consumers purchase street food, highlighting the critical role of vendors' practices in shaping customer trust and decisions. However, there is a research gap specific to Dumaguete City's Rizal Boulevard, where little is known about vendors' food safety knowledge, attitudes, or the challenges they face in meeting standards like those outlined in the Philippines' Food Safety Act of 2013 (RA 10661).

This study seeks to fill that gap by examining the food safety knowledge, attitudes, and practices of street food vendors at Rizal Boulevard. By exploring what vendors understand about hygiene, how seriously they prioritize food safety, and how they prepare and sell food, the research aims to pinpoint areas needing improvement. The ultimate goal is to provide practical insights to guide targeted training programs, policies, or support systems to help vendors comply with regulations and elevate their practices. This study hopes to ensure that street food remains a cherished tradition—safe, reliable, and enjoyable for locals and tourists—while supporting the vendors who keep this culinary culture alive.

2.0 Methodology

2.1 Research Design

This study surveyed 50 street food vendors along Rizal Boulevard in Dumaguete City to evaluate their food safety knowledge, attitudes, and practices in preparing, handling, storing, and selling food, aiming to inform a targeted training program. Using a quantitative survey design, as Creswell (2014) described, researchers collected and analyzed data through questionnaires to uncover trends and insights about vendors' behaviors and compliance with safety standards. By understanding these factors, the study seeks to enhance food safety, protect public health, and ensure the beloved street food scene remains safe and enjoyable.

2.2 Research Locale

This study takes place at Rizal Boulevard in Dumaguete City, a lively waterfront promenade named after Dr. Jose Rizal, where stunning sea views and a bustling atmosphere draw locals and tourists alike. The boulevard's vibrant street food scene, with vendors serving affordable treats like tempura and squid balls in the evenings, provides a rich and dynamic setting for exploring food safety practices and enhancing the culinary experience.

2.3 Research Participants

The study's respondents were the street food vendors of the Rizal Boulevard, Dumaguete City. The researchers used a purposive sampling technique to identify the respondents to the study. Purposive sampling, or judgmental or selective sampling, is a non-probability sampling technique where the researchers select respondents based on specific characteristics or qualities relevant to the study. In this study, the criteria for identifying the respondents are: 1. vendors that are selling around Rizal Boulevard in Dumaguete City, and 2. vendors that are selling street foods.

2.4 Research Instrument

The instrument used to gather significant data was patterned after the study of Tuglo et al. (2021), with a slight modification to reflect the study's current situation. Two seasoned consultants in the hospitality sector meticulously reviewed the questionnaire's content to ensure its validity. Their reviews confirmed that the questionnaire reflected the food safety knowledge, attitudes, and practices constructs relevant to street food vendors. Part I used the demographic profile of the respondents. Part II includes street food vendors' food safety knowledge, attitudes, and practices regarding preparation, handling, storage, and selling. Part III focused on the challenges the street food vendors faced in Rizal Boulevard, Dumaguete City.

2.5 Data Gathering Procedure

This study explored food safety practices among street food vendors at Rizal Boulevard in Dumaguete City, using carefully designed questionnaires to gather primary data, which was meticulously collected to ensure a high response rate. The data was analyzed with statistical tools like frequency, percentage, weighted mean, and Pearson r to uncover trends in vendors' knowledge, attitudes, and practices, revealing how often safety measures were applied and whether demographic factors influenced their approaches. Pearson's r was applied to identify relationships between vendors' food safety knowledge, attitudes, practices, and socio-demographic profiles.

2.6 Ethical Considerations

In carrying out this research, the researchers adhered to ethical standards, as required by the Data Privacy Act of 2012, to protect the respondents and maintain the confidentiality of their data. This extends from the initial data collection through to the final disposal of data, ensuring the rights and well-being of all participating respondents are protected:

3.0 Results and Discussion

This section presents, analyzes, and interprets data received from the respondents' background responses to survey forms. It describes the data analysis and discusses the study findings on assessing food safety knowledge, attitudes, and practices among street food vendors on Rizal Boulevard, Dumaguete City.

3.1 Respondents' Profile

Table 1 shows the socio-demographics of the vendors. Most of the vendors are aged 41-50. This age range often seeks employment opportunities and income sources to support themselves and their families.

Table 1. Socio-Demographic Profile of the Vendors

Variables	f	%
Age		
18-30 years old	6	12%
31-40 years old	7	14%
41-50 years old	19	38%
51-60 years old	10	20%
61 years old % above	8	16%
Gender		
Male	17	34%
Female	33	66%
Marital Status		
Single	17	34%
Married	31	62%
Widowed	2	4%
Highest Educational Attainment:		
College Level	8	16%
High School Graduate	30	60%
Elementary Graduate	12	24%
Have you ever attended training related to food safety?		
Yes	49	98%
No	1	2%
Do you have a business permit?		
Yes	50	100%
Do you have a health card?		
Yes	46	92%
No	4	8%
Number of years in the business:		
One year or below	2	4%
1-3 years	7	14%
4-6 years	3	6%
7-9 years	4	8%
10 years or above	34	68%
Average Monthly Income		
₱5,000 & below	29	58%
₱5,001- ₱10,000	14	28%
₱10,001- ₱15,000	4	8%

N-50

Street vending can be an accessible option for those who may face barriers to formal employment or have limited educational qualifications. Therefore, many individuals in this age group may turn to street food vending as a livelihood (Huyh-Van et al., 2022). Additionally, the data indicates that the respondents were predominantly female, who made up the majority. Street food vending may be suitable for women due to its flexible nature, allowing them to balance family responsibilities and work. Correspondingly, certain types of street food may be associated with women's traditional roles in food preparation and culinary expertise (Horwood et al., 2020).

Regarding marital status, most vendors were married. Street food vending can be seen as a way for married individuals to supplement their household income and support their families. It provides an opportunity for additional earnings and contributes to the household's financial stability (Alves da Silva et al., 2014). In addition, in terms of educational attainment, most of the vendors were high school graduates. High school education is often considered the minimum level of education in many countries. Therefore, a higher percentage of street food vendors being high school graduates may reflect the availability and accessibility of education up to that level. Street food vending is often perceived as a relatively accessible occupation with limited formal education or specialized skills. For individuals who may not have pursued higher education or vocational training, street food vending can provide an opportunity for self-employment and income generation (Kubik et al., 2003).

Regarding the vendors, they have attended training related to food safety. The majority of the vendors have attended the training. Many street food vendors enter the business with formal training or educational qualifications. These results confirmed the study of Rustia et al. (2017), which discusses food safety knowledge among pre-trained food handlers and highlights the importance of prior training in food safety practices. All the vendors have business permits. Street food vending is often part of the formal economy, where vendors may operate with formal licenses or permits. Obtaining a business permit can involve complex regulations, paperwork, and fees. Some street food vendors may find navigating these requirements difficult or discouraged by the associated costs and administrative burdens.

Regarding health cards, most vendors possess one. Presidential Decree 856, along with the Department of Health's Implementing Rules and Regulations of Chapter III on 'Food Establishments' within the Code on Sanitation of the Philippines, outlines compliance requirements for food vendors, including protective clothing and sanitary permits. Moreover, regarding the number of years in the business, most vendors have been working for 10 years or more. Many street food vendors may start their businesses with relatively low capital investment. New vendors may take time to establish themselves, build a customer base, and gain experience in operating their businesses effectively. Therefore, most street food vendors may fall within the 10-year and above timeframe as they are in the initial stages of their business operation (Otoo et al., 2012). In addition, in terms of the monthly income of the vendors, most of them have an average income of ₱5,000 or below. Street foods represent a significant part of urban food consumption for millions of low- and middle-income consumers in urban areas daily, and street foods may be the least expensive and most accessible means of obtaining a nutritionally balanced meal outside the home for many low-income people (Perez et al., 2019).

3.2 Food Safety Knowledge of Street Food Vendors in terms of Preparation, Handling, Storage, and Selling

Table 2 shows street food vendors' level of food safety knowledge regarding handling, preparation, selling, and storage. Street food vendors demonstrate a good understanding of food safety knowledge, with an overall grand weighted mean of 3.45. This indicates a reasonable grasp of handling, preparation, selling, and storage principles. However, the data reveals some inconsistencies. While knowledge of hand hygiene and utensil sanitation is strong, understanding the importance of checking the health status of food handlers and consistently wearing appropriate protective gear during preparation could be improved. The highest average knowledge score is found in hand sanitizing after handling money, highlighting a strong awareness of food safety. Addressing the identified knowledge gaps through targeted training could significantly enhance food safety practices.

Regarding handling, the street food vendors were "extremely knowledgeable" (weighted mean of 3.48). The high mean score suggests that, on average, street food vendors had a strong understanding of food handling practices. This includes activities such as storing, preparing, and hygienically serving food. It suggests that the street food vendors were aware of those necessary precautions, such as maintaining proper temperature, preventing cross-

contamination, practicing good personal hygiene, and handling food safety throughout the process (Liu et al., 2014).

Table 2. *Level of Food Safety Knowledge of Street Food Vendors in terms of Preparation, Handling, Storage, and Selling*

Description			w $\bar{x}$	SD	V.D.
Preparation			3.42	0.50	EK
1.	In preparing the food, proper hand sanitation reduces the risk of contamination.		3.58	0.50	EK
2.	Cleaning and sanitizing the utensils when preparing food is essential.		3.38	0.53	EK
3.	The area where food is prepared is adequately sanitized and cleaned.		3.42	0.54	EK
4.	The food must be kept safe and away from contamination while preparing.		3.48	0.58	EK
5.	Wearing a mask, gloves, caps, hair nets, aprons, etc., is essential in food preparation.		3.24	0.62	VK
Handling			3.48	0.52	EK
1.	Proper hand hygiene can prevent foodborne diseases.		3.70	0.46	EK
2.	The danger of food contamination is reduced with proper utensil cleaning and sanitation.		3.48	0.50	EK
3.	The area for raw ingredients is clean and properly sanitized.		3.34	0.48	EK
4.	Ensuring the quality of ingredients before the preparation is necessary.		3.50	0.51	EK
5.	The health status of food handlers should be checked before working.		3.40	0.57	EK
Storage			3.50	0.52	EK
1.	It is necessary to clean the hands when storing and retrieving food in the storage area.		3.54	0.50	EK
2.	Before being stored, containers for food must be adequately sealed.		3.50	0.51	EK
3.	The storage area is clean and sanitized before storing the food.		3.60	0.49	EK
4.	There is a sufficient hygienic storage area for food products.		3.42	0.50	EK
5.	Properly check the storage area's temperature periodically to reduce the risk of food contamination.		3.44	0.61	EK
Selling			3.46	0.55	EK
1.	Hand sanitizing is very important after handling money.		3.60	0.49	EK
2.	Food containers and other utensils must be sanitized and kept clean when serving the food.		3.38	0.49	EK
3.	The food stalls must be cleaned appropriately, and trash bins must be present nearby.		3.42	0.61	EK
4.	Food is displayed in a clean and sanitized area.		3.42	0.57	EK
5.	Displayed food not in direct contact with the floor or ground surface.		3.46	0.54	EK
<i>Legend:</i>					
	<i>Scale</i>	<i>Verbal Description</i>			
	3.26 - 4.00	Extremely Knowledgeable (EK)			
	2.51 - 3.25	Very Knowledgeable (VK)			
	1.76 - 2.50	Slightly knowledgeable (SK)			
	1.00 - 1.75	Not Knowledgeable (NK)			

Regarding food preparation, the street food vendors were "extremely knowledgeable" (weighted mean of 3.42). The high mean score showed that, on average, street food had a strong understanding of proper food preparation practices, which are essential for maintaining food safety. The finding suggests that street food vendors had good knowledge regarding food safety practices, particularly in food preparation (Azanza et al., 2000). Regarding food selling, the street food vendors were "extremely knowledgeable" (weighted mean of 3.46). The high mean score indicates that, on average, street food vendors have a strong understanding of the practices and considerations involved in selling food. This includes food presentation, appropriate portioning, cleanliness, hygiene during the selling process, and adhering to relevant regulations and standards (Dudeja & Singh, 2017).

Lastly, in terms of food storage, the street food vendors were "extremely knowledgeable" (weighted mean of 3.50). The high mean score indicates that, on average, street food vendors strongly understood proper food storage practices. This includes knowledge of appropriate temperature control, storage conditions, and proper packaging to maintain the quality and safety of food products. It suggests that street food vendors were aware of the necessary measures to maintain food freshness, prevent contamination, and extend the shelf life of their food products (Muinde & Kuria, 2005).

3.3 Food Safety Attitude of Street Food Vendors in terms of Preparation, Handling, Storage, and Selling

Table 3 shows the level of food safety attitude of street food vendors regarding handling, preparation, selling, and storage. Street food vendors demonstrate a positive attitude towards food safety, reflected in the overall grand weighted mean of 3.48. This suggests a general understanding and acceptance of the importance of hygienic practices. While the average attitude score is positive, the highest individual scores consistently highlight the importance of hand washing (both before handling food and after handling money) and maintaining clean and sanitized display areas. Areas needing further attention include consistently using personal protective equipment

during preparation and monitoring storage temperatures. The slightly lower scores in some areas suggest opportunities for targeted interventions to reinforce best practices and improve overall food safety attitudes.

Table 3. *Level of Food Safety Attitude of Street Food Vendors in terms of Preparation, Handling, Storage, and Selling*

Description			w $\bar{x}$	SD	V.D.
Preparation			3.47	0.52	SA
1.	To reduce the risk of contamination, proper hand sanitation is needed in preparing the food.		3.58	0.54	SA
2.	It is necessary to clean and sanitize the utensils before using them to prepare the food.		3.46	0.50	SA
3.	The area used for food preparation has been thoroughly cleaned and sanitized.		3.42	0.50	SA
4.	While being prepared, the food must be kept secure and free from contamination.		3.46	0.50	SA
5.	When preparing food, safety clothing such as masks, gloves, caps, hair nets, aprons, and the like is necessary.		3.44	0.58	SA
Handling			3.46	0.52	SA
1.	Wash hands before handling food to reduce the risk of food contamination.		3.66	0.52	SA
2.	Proper cleaning and sanitation of utensils decrease the risk of food contamination.		3.32	0.47	SA
3.	The area where raw ingredients are stored must be thoroughly cleaned and sanitized.		3.42	0.50	SA
4.	Before cooking, it is important to ensure the ingredients are of good quality.		3.38	0.53	SA
5.	Before beginning work, those handling food should check their health.		3.52	0.50	SA
Storage			3.47	0.51	SA
1.	Before putting foods away or getting them from the storage area, one must thoroughly wash their hands.		3.60	0.49	SA
2.	It is necessary that food containers be correctly sealed before being stored.		3.34	0.48	SA
3.	The area where food is stored has been adequately cleaned and sanitized before it is packed up.		3.52	0.50	SA
4.	There is an adequate space that is free of contamination to store food products.		3.48	0.50	SA
5.	Periodically monitor the temperature of the storage area to minimize the risk of food contamination.		3.42	0.54	SA
Selling			3.52	0.51	SA
1.	After handling money, it is essential to clean and disinfect one's hands.		3.42	0.50	SA
2.	Food containers and other tools must be cleaned and sanitized before serving the food.		3.58	0.54	SA
3.	It is required that the areas around the food stands be kept clean and that trash cans be closed.		3.46	0.50	SA
4.	The food is displayed in an adequately cleaned and sanitized area.		3.50	0.51	SA
5.	Food not in close contact with the ground or the floor.		3.64	0.48	SA
<i>Legend:</i>					
	<i>Scale</i>	<i>Verbal Description</i>			
	3.26 – 4.00	Strongly Agree (SA)			
	2.52 – 3.25	Agree (A)			
	1.76 – 2.50	Disagree (D)			
	1.00 – 1.75	Strongly Disagree			

Regarding handling, the street food vendors had a "strongly agree" weighted mean of 3.46. The high mean score suggests that, on average, street food vendors had a strong understanding of food handling. Food safety attitudes are a critical aspect of public health, as they directly influence individual behaviors and ultimately contribute to the overall safety of the food supply. Food handlers can also spread harmful microorganisms during and after they experience gastrointestinal infection (Baş et al., 2006). Food handlers should have excellent hygiene practices to reduce cross-contamination, thus protecting consumers from foodborne diseases. Knowledge and training are essential to ensure food handlers practice the correct food handling (Martins et al., 2012).

Regarding food preparation, the street food vendors "strongly agree" with a weighted mean of (3.47). The high mean score suggests that, on average, street food vendors had a strong understanding of food preparation practices. The results suggest that, while most consumers know the importance of cross-contamination and heating in preventing foodborne illness, this knowledge is not necessarily translated into behavior. The adoption of habitual cooking practices may also be important. Potentially risky behaviors were observed in the domestic food preparation environment (Fischer et al., 2007).

Regarding food selling, the street food vendors "strongly agree" with the weighted mean of (3.52). The high mean score suggests that, on average, street food vendors had a strong understanding of food selling. The act of selling food involves a delicate balance. While businesses strive to provide consumers with a wide selection of fresh and appealing products, they must also prioritize the safety of those products. The potential for contamination exists at every stage of the selling process, from receiving and storing ingredients to displaying and serving food. Improper temperature control, inadequate sanitation, and cross-contamination can all spread harmful bacteria, viruses, and parasites, resulting in foodborne illness. Small-scale dairy producers, often also the sellers of dairy products, are responsible for ensuring food safety conditions throughout the food distribution chain. Food contamination may appear in any part of the food chain, including sales, due to cross-contamination, the variety of food offered at open markets, improper food handling, contaminated equipment, and poor personal hygiene (Aleksic et al., 2023).

Lastly, the street food vendors "strongly agree" with a weighted mean of (3.47) regarding food storage. The high mean score suggests that, on average, street food vendors had a strong understanding of food storage. Maintaining a clean and sanitary environment for food storage is also crucial. Regular cleaning and disinfecting of storage areas, containers, and surfaces are essential. Pest control measures are vital to prevent insects, rodents, and other pests from accessing food. Water quality is equally important, ensuring that water for washing food and utensils is clean and safe. The safety of street foods is affected by several factors, from the quality of the raw materials to food handling and storage practices. In most cases, water flow from taps is not regular for hand and dishwashing, cooking, or drinking, leading the street vendors to store water under vulnerable conditions, subject to contamination. Street foods are exposed to appalling environmental conditions, such as insects, rodents, domestic animals/ other animals, and air pollution (Hanashiro et al., 2005).

3.4 Food Safety Practices of Street Food Vendors in terms of Preparation, Handling, Selling, and Storage

Table 4 shows the level of food safety practices of street food vendors in terms of handling, preparation, selling, and storage. Regarding handling, the street food vendors voted "always" with a weighted mean of 3.59. The high mean score suggests that, on average, street food vendors had a strong understanding of food handling. This includes the fact that food, a fundamental necessity for life, is often taken for granted. We consume it daily, rarely considering the intricate processes that ensure its safety. Food handling, a critical component of food safety practices, plays a vital role in protecting public health and ensuring a safe and wholesome food supply. Street foods have become a significant source of cooked food for most households and individuals in many developing countries, including Ghana. However, the rising concern about food-borne illness has questioned the knowledge of street food vendors to implement safety practices for food handling (Addo-Tham et al., 2020).

Table 4. *Level of Food Safety Practices of Street Food Vendors in terms of Preparation, Handling, Storage, and Selling*

Table 4. Level of Food Safety Practices of Street Food Vendors in terms of Preparation, Handling, Storage, and Selling			w $\bar{x}$	SD	VD
Preparation			3.49	0.52	A
1. Do you properly sanitize your hands when preparing the food?			3.48	0.50	A
2. Do you clean and sanitize the utensils before using them in preparing the food?			3.48	0.50	A
3. Have you properly sanitized and cleaned the area where food is prepared?			3.52	0.50	A
4. Do you keep your food products clean and away from contamination while preparing?			3.48	0.54	A
5. Do you wear a mask, gloves, caps, hairnets, apron, and other safety clothing when preparing food products?			3.50	0.54	A
Handling			3.59	0.49	A
1. Do you wash your hands before and after processing food?			3.74	0.44	A
2. Do you properly clean and sanitize your utensils before using them?			3.54	0.50	A
3. Do you clean up the areas where you put the raw ingredients?			3.54	0.50	A
4. Do you check the quality of ingredients before preparing your food products?			3.54	0.50	A
5. Do you consider your health condition before going to work?			3.60	0.49	A
Storage			3.52	0.54	A
1. Do you wash your hands in storing and retrieving foods in the storage area?			3.50	0.54	A
2. Do you properly seal the food containers before storing them?			3.50	0.51	A
3. Do you clean and sanitize your storage frequently?			3.52	0.54	A
4. Do you have adequate/ sufficient space for your food product away from contamination?			3.52	0.58	A
5. Do you check the temperature of your food storage regularly?			3.54	0.54	A
Selling			3.59	0.49	A
1. After handling money, do you clean or disinfect your hands?			3.60	0.49	A
2. When serving food, do you clean and sanitize the containers and other tools before using them?			3.54	0.50	A
3. Do you properly clean your food stalls and have your trash bins?			3.56	0.50	A
4. Do you regularly clean and sanitize the area for displaying food products?			3.78	0.42	A
5. Do you ensure your food does not come into close contact with the ground?			3.48	0.50	A
Legend:	Scale	Verbal Descriptions			
	3.26 – 4.00	Always (A)			
	2.52 – 3.25	Often (O)			
	1.76 – 2.50	Rarely (R)			
	1.00 – 1.75	Never (N)			

Regarding food preparation, street food vendors voted "always" with a weighted mean of 3.49. The high mean score suggests that, on average, street food vendors had a strong understanding of food preparation. This includes food preparation, which is about creating delicious meals and ensuring food safety. Improper food handling can lead to foodborne illnesses, which can cause various symptoms, from mild discomfort to severe illness and even death. Street food vending has become an important public health issue and a significant concern. This is due to

widespread foodborne diseases and the mushrooming of wayside food vendors who lack an adequate understanding of fundamental food safety issues. Primary sources contributing to microbial contamination are the place of preparation, utensils for cooking and serving, raw materials, time and temperature abuse of cooked foods, and the personal hygiene of vendors (Rane, 2019).

Regarding food selling, the street food vendors voted "always" with a weighted mean of 3.59. The high mean score suggests that, on average, street food vendors had a strong understanding of food selling. This includes maintaining consumer trust, paramount for any business selling food. Consumers rely on retailers and food service establishments to provide safe and wholesome products. When food safety practices are compromised, consumer confidence is shaken, leading to adverse consequences for businesses. Lost sales, damaged reputations, and legal repercussions can all result from food safety incidents. SFVs, who are usually untrained in food handling and sanitation, often operate their businesses informally with minimal regulation from the government (Alimi, 2016; IFRA, 2016; Imathlu, 2017). This allows activities that may severely impair the wholesomeness of street foods and potentially cause serious food safety concerns to consumers. Published reports, especially from developing countries, generally indicate that SFVs primarily sell from crowded places such as open-air markets and bus terminals to attract consumers (Kariuki et al., 2017).

Lastly, the street food vendors voted "always" weighted mean (3.52) regarding food storage. The high mean score suggests that, on average, street food vendors had a strong understanding of food storage. This includes the rising packaging issues highlighting their linkage to foreign body (FB) injuries due to aspiration, inhalation, or ingestion in children. Children represent a significant portion of consumers; thus, many hazards can arise when dealing with food products (Passali et al., 2012).

3.5 Challenges Faced by the Street Food Vendors in Rizal Boulevard, Dumaguete City

Table 5 shows the challenges faced by the street food vendors in Rizal Boulevard, Dumaguete City.

Table 5. Challenges Faced by the Street Food Vendors in Rizal Boulevard, Dumaguete City

Challenges Faced by the Street Food Vendors		w$\bar{x}$	SD	VD
Lack of access to safe water is a critical issue that needs to be addressed urgently, especially in street food vending, where hygiene and safety are paramount.		3.76	0.48	SA
Proper vending areas/zones for street vendors are essential for the safety and well-being of vendors and the general public.		3.52	0.54	SA
Poor waste disposal is a serious environmental issue that requires immediate action. Proper waste management is critical for maintaining hygiene and preventing health hazards.		3.56	0.50	SA
Having a secure storage place is crucial for ensuring the safety of personal belongings and valuable possessions.		3.34	0.56	SA
Unregulated street food vending can contribute to traffic congestion, a significant challenge that must be addressed to promote safe and organized vending practices.		3.34	0.63	SA
Price fluctuations in the street food market make it difficult for vendors to maintain stable profits and provide affordable food to customers.		3.30	0.68	SA
Weather conditions, such as rain and extreme heat, pose significant challenges to street food vendors, and appropriate measures should be taken to ensure their safety and well-being.		3.30	0.71	SA
Street food vendors often face harassment and bribery from law enforcement officers, and measures should be taken to protect them from such practices.		2.92	0.78	A
Poor socio-economic conditions and a lack of knowledge about safe and hygienic food vending practices make it difficult for street food vendors to maintain proper standards, and appropriate measures should be taken to support and educate them.		3.18	0.80	A
Many street food vendors lack access to banking services and credit, making it difficult for them to invest in their businesses and manage their cash flow effectively.		3.32	0.71	SA
Vendors are often exposed to health risks due to prolonged exposure to pollution, lack of sanitation facilities, and the physical demands of their work.		3.12	0.75	A
Street food vendors often face social stigma and discrimination, affecting their business and personal well-being.		3.00	0.81	A
Inconsistent supply of ingredients and fluctuating prices can disrupt operations and affect the quality of food offered.		3.20	0.73	A
GWM		3.30	0.70	SA
<i>Legend:</i>	<i>Scale</i>	<i>Verbal Descriptions</i>		
	3.26 – 4.00	Strongly Agree (SA)		
	2.52 – 3.25	Agree (A)		
	1.76 – 2.50	Disagree (D)		
	1.00 – 1.75	Strongly Disagree (SD)		

The results revealed that "Lack of access to safe water is a critical issue that needs to be addressed urgently, especially in street food vending, where hygiene and safety are of utmost importance, with a weighted mean of (3.76) they encounter in their daily activities. Another key issue is the lack of proper vending areas or zones, which scored a mean of 3.52. Designated vending spaces are crucial for ensuring vendor safety, reducing public disturbances, and mitigating problems like overcrowding and traffic congestion. Poor waste disposal is another primary concern, with a mean of 3.56. Effective waste management is vital for maintaining cleanliness and preventing environmental and health hazards in street vending areas.

Additionally, the lack of secure storage for personal and business belongings, which scored a mean of 3.34, poses risks and stresses the daily operations of street vendors. These findings underscore the need for targeted interventions to address these challenges, such as improving access to clean water, implementing effective waste management systems, establishing designated vending areas, and providing secure storage facilities. Addressing these issues can significantly enhance street food vendors' working conditions, safety, and well-being. This finding emphasizes the urgent need to address the issue of inadequate access to safe water, particularly within the context of street food vending, where hygiene and safety are of utmost importance. The lack of safe water can pose significant risks to food hygiene and safety practices, potentially leading to foodborne illness and compromised public health (Johnson et al., 2020). These results highlight the crucial nature of addressing this challenge to ensure safe and hygienic street food for consumers (Cortese et al., 2016).

3.6. Correlation between Food Safety Knowledge, Food Safety Attitude, and Food Safety Practices among Street Food Vendors in Rizal Boulevard, Dumaguete City

The relationship between food safety knowledge and food safety attitude among street food vendors in Rizal Boulevard, Dumaguete City, was investigated using the Pearson product-moment correlation coefficient.

Table 6. Correlation between Food Safety Knowledge, Food Safety Attitude, and Food Safety Practices among Street Food Vendors in Rizal Boulevard, Dumaguete City

Variables Correlated	r_s	Verbal Interpretation	$p - value$	Decision
Food Safety Knowledge and Food Safety Attitude	0.298	Weak Positive	0.036	Reject Ho
Food Safety Knowledge and Food Safety Practices	0.412	Strong Positive	0.003	Reject Ho
Food Safety Attitude and Food Safety Practices	0.271	Weak Positive	0.057	Fail to reject Ho

Note:

1. If $p - value \leq 0.05$, reject Ho. There is sufficient evidence to support the claim.

2. If $p - value > 0.05$, fail to reject Ho. There is insufficient evidence to support the claim.

The results revealed a weak positive correlation between food safety knowledge and the food safety attitude of street food vendors. The weak positive correlation suggests that the street food vendors are not knowledgeable enough about food safety; their attitude about food safety also needs to be improved. The results revealed a significant relationship between food safety knowledge and food safety attitude. This finding highlights the importance of enhancing food safety knowledge among vendors to positively influence their attitudes and promote safer food handling practices in the street food sector. The study emphasizes the strong positive correlation between food safety knowledge and practices among street food vendors in Rizal Boulevard, Dumaguete City, as indicated by a grand weighted mean of 10.1. This finding demonstrates that vendors with higher food safety knowledge are more likely to adhere to safe food handling practices. The result highlights the critical role of education and training in equipping vendors with the necessary skills and awareness to ensure food safety. Strengthening such initiatives can significantly improve hygienic practices, ensuring safer street food for the community. Local authorities and stakeholders can promote a safer and healthier street food environment by prioritizing enhancing food safety knowledge, ultimately benefiting public health and consumer confidence. A study conducted by Chen et al. (2019) provides comprehensive insights into the relationship between food safety knowledge and attitudes among food vendors. The review consolidates findings from multiple studies and underscores the positive association between food safety knowledge and attitudes, emphasizing the need for targeted interventions to improve vendor knowledge and enhance their attitudes toward food safety. Furthermore, Nasir et al. (2020) explore the connection between food safety knowledge and practices among food handlers. This study reveals a weak positive correlation, supporting that improving food safety knowledge can lead to better adherence to safe food handling practices.

The relationship between food safety knowledge and food safety practices among street food vendors in Rizal Boulevard, Dumaguete City, was investigated using the Pearson product-moment correlation coefficient. The

results revealed a strong positive correlation between food safety knowledge and practices of street food vendors. The results suggest that street food vendors' knowledge about food safety increases, and their adherence to food safety practices improves. This finding emphasizes the importance of enhancing food safety knowledge among vendors to positively influence their practices and promote safer food handling in the street food sector. A relevant study conducted by Labao et al. (2024) investigates the relationship between food safety knowledge and hygiene practices among street vendors. The findings suggest that vendors with higher food safety knowledge demonstrate better hygiene practices, reinforcing the importance of education in food handling. They underline the importance of education, training, and knowledge enhancement initiatives to improve food safety practices in the street food sector. By equipping street food vendors with the necessary knowledge and promoting its application in their daily practices, Rizal Boulevard, Dumaguete City, can foster safer and more hygienic street food vending practices.

The relationship between food safety attitudes and food safety practices among street food vendors in Rizal Boulevard, Dumaguete City, was investigated using the Pearson product-moment correlation coefficient. The results revealed a weak positive correlation between food safety attitudes and practices of street food vendors. The results suggest that street food vendors' attitudes toward food safety did not improve; their adherence to food safety practices also decreased. A relevant study conducted by Argente et al. (2024) examined food safety knowledge, attitudes, and practices among street food vendors in Batangas City, Philippines, and found that while vendors had good attitudes toward food safety, these did not always translate into proper practices. The study aligns with the results of the current study, scoring a weak positive correlation between food safety attitudes and practices among street food vendors. They emphasize the need for interventions and strategies that target vendors' attitudes toward food safety to drive improvements in their practices.

4.0 Conclusion

In conclusion, the socio-demographic profile of street food vendors in Dumaguete City highlights a predominantly female group aged 41-50, married, and high school-educated. They demonstrate a strong commitment to food safety and business compliance, with most vendors having extensive experience and earning modest incomes. This profile contrasts with their younger, predominantly female, and student customer base, who frequent street food stalls for affordable and convenient meal options. The accessibility and affordability of street food make it a popular choice among low- to middle-income groups, particularly students, underlining its significant socio-economic role in the local community.

The study also reveals that vendors possess high food safety knowledge across various domains, indicating their commitment to maintaining hygiene and safety standards. However, there may be a gap in the sharing of knowledge between genders, which could affect food safety behaviors and attitudes. Despite challenges such as access to safe water, proper vending areas, and waste disposal, vendors continue to ensure food safety, as their customers perceive. Overall, the findings underscore the importance of food safety education and adherence to hygienic practices, ensuring that street food remains a safe and vital food source for the predominantly young customer base in Dumaguete City.

The study reveals a significant positive correlation between food safety knowledge and practices among street vendors in Rizal Boulevard, Dumaguete City. This indicates that as vendors' food safety knowledge improves, their adherence to safe practices also increases, underscoring the importance of food safety education in enhancing practical behaviors. On the other hand, a weak positive correlation was found between food safety knowledge and attitude, suggesting that while increased knowledge slightly influences attitudes, the impact is less pronounced.

The study highlights the necessity of targeted educational programs to bridge the gap between food safety knowledge and practices. Improving vendors' understanding of food safety can cultivate better hygiene and safety standards. These findings emphasize the critical role of continuous education and support systems in ensuring the health and safety of street food consumers, ultimately contributing to the sustainability of the street food sector in Dumaguete City.

Of course, considering the scope of the exploration, the study is not free from limitations. The researcher reports the following limitations: 1. The study was limited to the selected street food vendors, and 2. was conducted in Rizal Boulevard, Dumaguete City only.

5.0 Contributions of Authors

Ryan O. Tayco: conceptualization, writing original draft, writing review and editing, data analysis
Vicente B. Canete: writing original draft, writing review and editing, data analysis, data gathering
John Dino Bulfa: writing original draft, writing review and editing, data analysis, data gathering
Also, Marie Ege: writing original draft, writing review and editing, data analysis, data gathering
Ellah Noblefranca: writing original draft, writing review and editing, data analysis, data gathering
May Ann Remollo: writing original draft, writing review and editing, data analysis, and data gathering

6.0 Funding

This research received no funding.

7.0 Conflict of Interests

The authors have no conflict of interest to declare.

8.0 Acknowledgment

The authors acknowledge the assistance of the street food vendors in Rizal Boulevard Dumaguete City and the Hospitality Management Faculty of Negros Oriental State University to finish this study.

9.0 References

- Addo-Tham, R., Appiah-Brempong, E., Vampere, H., Acquah-Gyan, E., & Gyimah Akwasi, A. (2020). Knowledge on food safety and food handling practices among rural homes in Ghana: A cross-sectional study. *Advances in Public Health*, 2020, Article 3983403. <https://doi.org/10.1155/2020/3983403>
- Ahmed, M. J., Ali, M., Alam, K. E., Mamun, M., Bhuiyan, M. I. H., Bhandari, P., Chalise, R., Naem, S. M. Z., Rahi, M. A. I., Islam, K., Bristy, F., Khatun, A., & Sabrin, M. S. (2024). Assessing knowledge, attitude, and practices (KAP) of food safety among Dhaka City's street food vendors: A public health issue. <https://doi.org/10.21203/rs.3.rs-4737912/v1>
- Aleksic, B., Djekic, I., Miodinovic, J., Miloradovic, Z., Savic, R., Stojanovic, M., & Tomasevic, I. (2023). The challenges of the food safety approach in small-scale dairy processing: A case study from Serbia. *Food Control*, 150, 109751. <https://doi.org/10.1016/j.foodcont.2023.109751>
- Alimi, B. A. (2016). Risk factors in street food practices in developing countries: A review. *Food Science and Human Wellness*, 5(3), 141–148. <https://doi.org/10.1016/j.fshw.2016.05.001>
- Alves Da Silva, S., Cardoso, R. D. C. V., Góes, J. Á. W., Santos, J. N., Ramos, F. P., Bispo De Jesus, R., Sabá Do Vale, R., & Teles Da Silva, P. S. (2014). Street food on the coast of Salvador, Bahia, Brazil: A study from the socioeconomic and food safety perspectives. *Food Control*, 40, 78–84. <https://doi.org/10.1016/j.foodcont.2013.11.022>
- Argente, M., Gordocillo, N., Africa, L., Barba, C., & Dizon, J. (2020). Assessment of knowledge, attitude, and practices on food safety and compliance to microbiological safety guidelines among vendors of commonly patronized street foods in Poblacion, Batangas City, Philippines. *Journal of Human Ecology*, 9(1). <https://tinyurl.com/bde763ay>
- Azanza, P., Gatchalian, C., & Ortega, M. (2000). Food safety knowledge and practices of streetfood vendors in a Philippines university campus. *International Journal of Food Sciences and Nutrition*, 51(4), 235–246. <https://doi.org/10.1080/09637480050077121>
- Baş, M., Ersun, A. Ş., & Kıvanç, C. (2006). The evaluation of food hygiene knowledge, attitudes, and practices of food handlers in food businesses in Turkey. *Food Control*, 17(4), 317–322. <https://doi.org/10.1016/j.foodcont.2004.11.006>
- Chen, H., Liu, S., Zhao, J., & Li, J. (2019). Food safety knowledge and attitudes of food vendors: A review. *Journal of Food Safety*, 39(5), e12663. <https://doi.org/10.1111/jfs.12663>
- Cortese, R. D. M., Veiros, M. B., Feldman, C., & Cavalli, S. B. (2016). Food safety and hygiene practices of vendors during the chain of street food production in Florianópolis, Brazil: A cross-sectional study. *Food Control*, 62, 178–186. <https://doi.org/10.1016/j.foodcont.2015.10.027>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications. <https://tinyurl.com/33sxverf>
- Donkor, E. S., Kayang, B. B., Quay, J., & Akyeh, M. L. (2017). Application of the WHO keys of safer food to improve food handling practices of food vendors in a poor resource community in Ghana. *International Journal of Environmental Research and Public Health*, 6(4), 283–292. <https://doi.org/10.3390/ijerph6041283>
- Dudeja, P., Singh, A., Sahni, N., Kaur, S., & Goel, S. (2017). Effectiveness of an intervention package on knowledge, attitude, and practices of food handlers in a tertiary care hospital of North India: A before and after comparison study. *Medical Journal Armed Forces India*, 73(1), 49–53. <https://doi.org/10.1016/j.mjaifi.2016.10.002>
- Dudeja, A., Gupta, & A. Minhas (Eds.). *Food safety in the 21st century* (pp. 227–238). Academic Press. <https://doi.org/10.1016/B978-0-12-801773-9.00018-8>
- Fischer, A. R. H., De Jong, A. E. L., Van Asselt, E. D., De Jonge, R., Frewer, L. J., & Nauta, M. J. (2007). Food safety in the domestic environment: An interdisciplinary investigation of microbial hazards during food preparation. *Risk Analysis*, 27(4), 1065–1082. <https://doi.org/10.1111/j.1539-6924.2007.00944.x>
- Food Safety Act 2013 (Republic Act No. 10611). <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC128390/>
- Hanashiro, A., Morita, M., Matté, G. R., Matté, M. H., & Torres, E. A. F. S. (2005). Microbiological quality of selected street foods from a restricted area of São Paulo City, Brazil. *Food Control*, 16(5), 439–444. <https://doi.org/10.1016/j.foodcont.2004.05.004>
- Horwood, P. F., Anglim, J., Larson, L., Greenhill, A. R., Sivasankaran, D., & Jondou, M. (2020). Street food vending in the Pacific: Food safety challenges and opportunities in the urban informal sector. *Pacific Health Dialog*, 21(7), 434–443. <https://doi.org/10.26635/phd.2020.657>
- Huynh-Van, B., Bui-Van, T., & Vo-Thi, K. (2022). Socio-economic factors influencing street food vending in Ho Chi Minh City, Vietnam. *Journal of Asian Business and Economic Studies*, 29(3), 171–183. <https://doi.org/10.1108/JABES-08-2021-0133>
- Imathlu, S. (2017). Street-vended foods: potential for improving food and nutrition security or a risk factor for foodborne diseases in developing countries? *Current Research in Nutrition and Food Science Journal*, 5(2), 55–65. <https://doi.org/10.12944/CRNFSI.5.2.02>
- Johnson, N., Turnbull, S., & Phillips, C. (2020). Assessing the food safety knowledge, attitudes, and practices of street food vendors in Guyana. *Journal of Food Protection*, 83(8), 1342–1348. <https://doi.org/10.4315/JFP-20-024>
- Kariuki, E. N., Ng'ang'a, Z. W., & Wanzala, P. (2017). Food handling practices and microbial quality of street foods in Nairobi, Kenya. *African Journal of Food Science*, 11(8), 272–278. <https://doi.org/10.5897/AJFS2017.1598>
- Kubik, M. Y., Lytle, L. A., Hannan, P. J., Perry, C. L., & Story, M. (2003). The association of the school food environment with dietary behaviors of young adolescents. *American Journal of Public Health*, 93(7), 1168–1173. <https://doi.org/10.2105/AJPH.93.7.1168>
- Labao, R. U., Sayson, L. J., Maculam, A. J. B., & Llorente, H. M. C. (2024). Food safety knowledge and hygiene practices among street vendors. *The Research Probe*, 4(1), 65–74. <https://doi.org/10.53378/trp.0624.1.6>
- Liu, Z., Zhang, G., & Zhang, X. (2014). Urban street foods in Shijiazhuang City, China: Current status, safety practices and risk mitigating strategies. *Food Control*, 41, 212–218. <https://doi.org/10.1016/j.foodcont.2014.01.027>
- Martins, R. B., Hogg, T., & Otero, J. G. (2012). Food handlers' knowledge on food hygiene: The case of a catering company in Portugal. *Food Control*, 23(1), 184–190. <https://doi.org/10.1016/j.foodcont.2011.07.008>
- Nasir, M., Khan, M. A., & Abbas, S. (2020). Relationship between food safety knowledge and practices among food handlers: A review. *Journal of Food Safety*, 40(3), e12785. <https://doi.org/10.1111/jfs.12785>
- Otoo, M., Fulton, J., & Lowenberg-DeBoer, J. (2012). Street food vending in Accra, Ghana: Socio-economic characteristics and marketing strategies. *African Journal of Agricultural Research*, 7(45), 6033–6042. <https://doi.org/10.5897/AJAR12.1055>
- Passali, D., Gregori, D., Lorenzoni, G., Conti, G., Passali, F. M., & Passali, G. C. (2012). Foreign body injuries in children: A persistent problem. *International Journal of Pediatric Otorhinolaryngology*, 76(Suppl 1), S26–S32. <https://doi.org/10.1016/j.ijporl.2012.02.008>
- Perez, J. G., Khayat, S., & Villanueva, B. (2019). Street food vending: For economic and social empowerment of women street food vendors in Dumaguete City, Philippines. *PRISM*, 24(1). <https://norsu.edu.ph/norsuprism/index.php/norsuprism/article/view/280>
- Presidential Decree 856. Code on Sanitation of the Philippines. Retrieved from <https://tinyurl.com/4mr3n4da>
- Rane, S. (2019). Street vended food in developing world: Hazard analyses. *Indian Journal of Microbiology*, 51(1), 100–106. <https://doi.org/10.1007/s12088-011-0154-x>
- Rustia, A., Azanza, M. P. V. A., & Gascon, F. S. (2017). Food safety knowledge assessment model for pre-trained food handlers. *Philippine Journal of Science*, 146(4), 371–385. <https://tinyurl.com/s34hrp46>

- Sharma, I., Mazumdar, J. A., & Deka, N. (2018). Food safety knowledge, attitude, and practices among street food vendors in Guwahati City, India. *International Journal of Current Microbiology and Applied Sciences*, 7(8), 3265-3274. <https://doi.org/10.20546/ijcmas.2018.708.347>
- Tayco, R., Zamora, G., & Tubog, M. V. (2022). Perceived risks and consumer buying behavior on street food around negros oriental state university, Dumaguete City. *International Journal of Research in Business and Technology* (ISSN: 2291-2118), 12(2), 157-163. <https://doi.org/10.17722/ijrbt.v12i2.1247>
- Tuglo, L. S., Agordoh, P. D., Aduguba, W. S., Dziedzorm, M. P., Amfah, C. K., & Haynes, E. (2021). Food safety knowledge, attitude, and hygiene practices of street-cooked food handlers in North Dayi District, Ghana. *Environmental Health and Preventive Medicine*, 26(1), 54. <https://doi.org/10.1186/s12199-021-00975-8>