

Food Safety Compliance and Hygiene Practices among Street Food Vendors in Dapitan City, Philippines

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ABSTRACT

This study assessed food safety compliance and hygiene practices among street food vendors in Dapitan City, Philippines, using a quantitative descriptive research design. A total of 57 respondents were surveyed to determine their sanitary practices, food preparation practices, and compliance with permit requirements, as well as to examine differences in these practices when grouped according to profile variables. Findings reveal that most vendors are aged 29–33 years, female, single, high school level, with one year or less in operation, and mainly selling common street foods such as turon, tempura, fish/squid ball, kwek-kwek, French fries, siomai, kikiam, and balut. In terms of sanitary practices, vendors consistently observe proper waste disposal, use of cleaning agents, and personal cleanliness; however, critical practices such as wearing protective gear and consistent handwashing before food handling remain inadequately practiced. Similarly, food preparation practices show partial compliance, with consistent observance of proper serving temperature and chemical separation, but gaps in storage, refrigeration, and safe handling persist. On the other hand, full compliance was observed in permit requirements, with all vendors maintaining valid health certificates and business permits. Statistical analysis revealed no significant differences in sanitary and food preparation practices, as well as permit compliance, when grouped according to age, sex, marital status, educational attainment, years in operation, and type of street food, indicating uniform practices across all categories. Overall, the study concludes that while regulatory compliance is strong, continuous training and stricter monitoring are essential to improve critical hygiene and food safety practices among street food vendors.

Keywords: food safety, compliance, hygiene practices, street food vendors

INTRODUCTION

Street food vending is a vibrant and essential component of urban life in many developing countries, particularly in the Philippines. It provides affordable and accessible meals to a wide segment of the population while serving as an important source of livelihood for many individuals and families. Street food vendors contribute significantly to local economies and urban food systems, especially in areas where formal food establishments may be limited or financially inaccessible. Because of its affordability and convenience, street food has become a common dietary option for students, workers, and travelers, making it an integral part of daily life and cultural identity in many communities.

Recent studies have emphasized the need to strengthen food safety awareness and compliance among street food vendors. For instance, a study by Armas, Villegas, Lopez & La Penia (2024) found that while many vendors attempt to maintain basic sanitation practices, several still lack adequate knowledge of food safety regulations and proper waste management systems, emphasizing the need for policy support and targeted interventions. Similarly, Belgica (2024) reported that although street food vendors in Iloilo demonstrated considerable knowledge of food safety principles, gaps were observed in the consistent application of hygienic practices, suggesting the necessity for continuous training and monitoring programs. Furthermore Belgica (2024) highlighted that sanitation and personal hygiene practices remain key determinants of food safety among street food vendors, underscoring the importance of regular inspection and compliance monitoring.

In the context of local communities, street food vending continues to expand due to increasing urbanization, tourism, and the demand for affordable food options. Dapitan City, a growing tourism and educational hub in Zamboanga Del Norte, hosts numerous street food vendors that cater to residents, visitors, and students. While these vendors contribute to the city's economy and culinary culture, concerns about food safety compliance and hygiene practices remain an important issue that must be addressed to ensure the protection of public health. However, despite the presence of street food vendors in the locality, limited empirical studies have comprehensively examined their level of compliance with food safety standards and hygienic practices.

Given these circumstances, there is a clear need to systematically assess the current practices of street food vendors in order to identify potential gaps in sanitation, hygiene, and food safety compliance. Understanding these practices is crucial for developing evidence-based interventions, training programs, and regulatory policies that will strengthen public health protection and promote responsible food vending practices. Therefore, this study aims to examine the food safety compliance and hygiene practices among street food vendors in Dapitan City, Philippines, with the end view of providing data-driven insights that may guide local government units, health authorities, and stakeholders in improving food safety standards and ensuring the well-being of consumers.

Objectives of the Study

1. To determine the demographic profile of the street food vendors in terms of age, sex, marital status, educational attainment, number of years in operation, and type of street food products sold.
2. To assess the level of food safety and hygiene practices of street food vendors in terms of sanitary practices, food preparation practices, and compliance with required permits.
3. To evaluate the overall compliance of street food vendors with food safety standards in order to identify areas that need improvement in their vending practices.
4. To propose recommendations that may help improve food safety compliance and hygiene practices among street food vendors in Dapitan City.

REVIEW OF RELATED LITERATURE

Street food vending plays a vital role in the informal food sector in many developing countries, including the Philippines. It provides affordable, accessible, and convenient food options for consumers while serving as a source of livelihood for many individuals. Despite its economic benefits, street food vending raises significant concerns regarding food safety and hygiene practices because improper food handling may lead to food contamination and foodborne illnesses.

Food safety practices according to the World Health Organization (2023), emphasizes that safe food handling practices—such as proper handwashing, use of protective equipment, temperature control, and prevention of cross-contamination—are universal standards that all food handlers must follow regardless of demographic background. This position is reinforced by the Food and Agriculture Organization (2022), which argues that structured regulatory systems and continuous training are the most effective drivers of compliance in informal food sectors, including street vending, where standardized practices can significantly reduce foodborne risks. Similarly, Akabanda, Hlortsi, and Owusu-Kwarteng (2021) found that improved knowledge and structured food safety education significantly enhance hygienic practices among vendors, suggesting that behavior change is achievable through targeted interventions rather than being fixed by socio-demographic characteristics. This aligns with the findings of Lues and Van Tonder (2020), who reported that consistent monitoring and enforcement of hygiene standards lead to more uniform compliance among informal food handlers. However, contrasting perspectives highlight that compliance is not always uniform and may be influenced by personal and contextual factors. For instance, Mensah, Yeboah-Manu, Owusu-Darko, and Ablordey (2002) argued that gaps in sanitation practices are often linked to limited education, inadequate infrastructure, and socio-economic constraints, suggesting that not all vendors are equally capable of meeting food safety standards. In the same line, later studies such as Rane (2011) noted that street food safety practices in developing settings are often inconsistent due to lack of resources, weak enforcement, and informal working conditions. Lastly, Alimi and Workneh (2021) emphasized that while regulations exist, actual compliance is heavily shaped by enforcement intensity and local governance, meaning that even well-designed policies may produce uneven outcomes across

communities. This perspective contrasts with WHO's more universalist view by suggesting that structural and institutional limitations can create significant variability in real-world practices.

Hygiene practices as explained by the World Health Organization (2023), which emphasizes that personal hygiene practices—such as regular handwashing, use of protective clothing, proper sanitation of utensils, and avoidance of contamination—are fundamental “first-line defenses” in preventing foodborne diseases. This universalist view is reinforced by the Food and Agriculture Organization (2022), which stresses that hygiene compliance improves significantly when standardized food safety training and regulatory systems are consistently implemented, particularly in informal food sectors like street vending. Supporting this perspective, Akabanda, Hlortsi, and Owusu-Kwarteng (2021) found that structured food safety education significantly improves hygiene behavior among food vendors, particularly in areas such as hand hygiene, utensil sanitation, and avoidance of bare-hand contact with food. Similarly, Lues and Van Tonder (2020) argue that consistent monitoring and inspection systems reinforce hygienic discipline, leading to more standardized and sustainable hygiene practices among informal food handlers. However, contrasting views highlight that hygiene practices are not solely determined by knowledge or training. Mensah, Yeboah-Manu, Owusu-Darko, and Ablordey (2002) argue that poor hygiene practices are often rooted in structural constraints such as limited access to clean water, inadequate sanitation facilities, and low socio-economic status, which can hinder even knowledgeable vendors from practicing proper hygiene. In agreement with this, Rane (2011) emphasizes that street food environments in developing regions often make it difficult to maintain ideal hygiene due to informal settings, overcrowding, and lack of infrastructure support. Adding further complexity, Alimi and Workneh (2021) highlight that hygiene compliance is strongly influenced by enforcement intensity and governance systems, suggesting that even well-informed vendors may fail to maintain proper hygiene if regulatory oversight is weak or inconsistent. This contrasts with WHO's assumption of universal applicability by showing that hygiene behavior is deeply context-dependent.

Meanwhile, sanitary practices in the foundational perspective is presented by the World Health Organization (2023), which emphasizes that sanitary practices—such as proper waste disposal, regular cleaning of utensils, hand hygiene, and maintenance of a clean food environment—are essential pillars in preventing foodborne diseases and must be consistently observed by all food handlers regardless of setting. This global standard is reinforced by the Food and Agriculture Organization (2022), which highlights that effective sanitation systems, when supported by training and regulation, significantly reduce contamination risks in informal food sectors, including street vending environments. Supporting these views, Akabanda, Hlortsi, and Owusu-Kwarteng (2021) found that sanitary practices among food vendors improve significantly when structured training programs are implemented, particularly in waste management, utensil sanitation, and personal cleanliness. Likewise, Lues and Van Tonder (2020) argue that consistent inspection and monitoring systems strengthen compliance, leading to more standardized sanitary behaviors among informal food handlers over time. These studies collectively affirm that knowledge, training, and enforcement are key drivers of improved sanitation practices. However, contrasting perspectives suggest that sanitary compliance is not solely dependent on awareness or regulation. Mensah, Yeboah-Manu, Owusu-Darko, and Ablordey (2002) argue that poor sanitary practices are often linked to structural and environmental constraints, such as inadequate access to clean water, lack of waste disposal facilities, and limited financial capacity to maintain hygiene infrastructure. In agreement, Rane (2011) highlights that street food vendors in developing regions frequently operate in environments that make proper sanitation difficult, regardless of their knowledge or willingness to comply, due to overcrowding and informal business conditions. Adding another dimension, Alimi and Workneh (2021) emphasize that while sanitary regulations exist, actual compliance depends heavily on governance quality and enforcement consistency. Their findings suggest that even well-designed sanitation policies may not yield uniform results if monitoring systems are weak or irregular, contrasting with WHO's more standardized global assumption of universal compliance.

Food preparation practices as presented by the World Health Organization (2023), which emphasizes that safe food preparation practices—such as proper cooking temperatures, separation of raw and cooked foods, safe storage, and avoidance of cross-contamination—are essential in preventing foodborne diseases and must be consistently applied by all food handlers regardless of context. This position is reinforced by the Food and Agriculture Organization (2022), which highlights that standardized food preparation systems, when supported by training and regulation, significantly improve food safety outcomes, particularly in informal sectors like street

food vending. Supporting these perspectives, Akabanda, Hlortsi, and Owusu-Kwarteng (2021) found that structured food safety education leads to measurable improvements in food preparation behaviors, including proper handling, storage, and temperature control. Their findings suggest that knowledge transfer and training are effective tools in improving compliance with food safety standards. Similarly, Lues and Van Tonder (2020) argue that regular monitoring and enforcement encourage consistency in food preparation practices, ensuring that vendors maintain safer and more standardized procedures over time. However, contrasting views emphasize that food preparation practices are not solely determined by knowledge or regulation. Mensah, Yeboah-Manu, Owusu-Darko, and Ablordey (2002) argue that inadequate infrastructure, limited access to refrigeration, and poor working environments often prevent vendors from fully implementing proper food preparation practices, even when they are aware of them. In agreement, Rane (2011) highlights that street food environments in developing countries are often informal and resource-constrained, making ideal food preparation practices difficult to sustain in daily operations. Alimi and Workneh (2021) emphasize that regulatory enforcement and governance quality significantly influence food preparation behavior. Their findings suggest that even when training is provided, inconsistent monitoring and weak enforcement can result in uneven compliance among vendors, challenging the assumption that education alone guarantees proper practice.

Permits in the street food sector, particularly health certificates and business licenses, are widely recognized in food safety literature as critical regulatory tools that ensure accountability, traceability, and public health protection. A strong institutional perspective is advanced by the World Health Organization (2023), which emphasizes that licensing and certification systems are essential components of food safety governance, as they ensure that food handlers meet minimum health and hygiene standards before engaging in food operations. This view is reinforced by the Food and Agriculture Organization (2022), which highlights that formal permits in informal food sectors help standardize practices, improve compliance, and strengthen government monitoring of food safety risks. Supporting these global standards, Alimi and Workneh (2021) argue that permit systems are most effective when combined with consistent inspection and enforcement mechanisms, noting that compliance improves significantly when vendors perceive strong regulatory oversight. Similarly, Lues and Van Tonder (2020) found that licensing requirements contribute to more uniform compliance among street food vendors, as permits often serve as a gateway to formal recognition and routine monitoring by health authorities. These studies collectively affirm that permits function not only as legal requirements but also as instruments that promote discipline and standardization in food safety practices. However, contrasting perspectives suggest that the effectiveness of permit systems is not always guaranteed in practice. Mensah, Yeboah-Manu, Owusu-Darko, and Ablordey (2002) argue that in many developing contexts, permit systems may exist in policy but are weakly enforced, resulting in limited impact on actual hygiene and safety outcomes. In a similar vein, Rane (2011) highlights that informal food sectors often operate with partial or inconsistent regulation, where permits may be obtained primarily for compliance purposes without necessarily translating into improved day-to-day practices. Adding another dimension, Ababio and Lovatt (2015) emphasize that while permits are important for formalization, their effectiveness depends heavily on accessibility and administrative efficiency. They argue that overly complex or costly licensing processes can discourage compliance among small-scale vendors, potentially pushing some operators further into informality rather than improving safety standards.

Overall, the literature presents a balanced and interconnected perspective: hygiene, sanitation, food preparation, and permits are mutually reinforcing pillars of food safety. While international organizations highlight standardization through education and regulation, field-based studies reveal persistent gaps driven by environmental, structural, and governance challenges. This synthesis underscores that achieving sustainable food safety compliance among street food vendors requires an integrated approach that combines training, infrastructure development, effective regulation, and continuous monitoring to ensure that safe practices are not only known but consistently practiced in real-world settings.

THEORETICAL FRAMEWORK

This study is anchored on the Health Belief Model (HBM), developed by Hochbaum (1958) and further elaborated by Rosenstock (1974), which explains that individuals are more likely to adopt health-promoting behaviors when they perceive a personal risk and understand the benefits of taking preventive actions. In the context of street food vending, this theory suggests that vendors are more likely to comply with food safety

regulations and maintain proper hygiene practices when they recognize the potential health risks of unsafe food handling and understand that proper sanitation protects both consumers and their business reputation (Belgica, 2024).

The Health Belief Model identifies several key components that influence behavior: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action. Street food vendors who understand that improperly handled food may cause foodborne diseases (perceived susceptibility and severity) and who see the advantages of following proper hygiene practices, such as maintaining customer trust and avoiding sanctions (perceived benefits), are more likely to comply with food safety standards. Barriers, such as limited facilities or lack of knowledge, may hinder compliance unless mitigated through interventions like training and regulatory inspections (De Guzman, 2024; Gonzales & Pabilando, 2023). By applying the HBM, this study seeks to understand how the perceptions and attitudes of street food vendors in Dapitan City influence their compliance with food safety regulations and adherence to hygiene practices. The theoretical framework provides a basis for analyzing whether vendors' knowledge, risk awareness, and motivation toward health-conscious behavior determine the level of food safety and hygiene practices implemented, ultimately safeguarding consumer health and promoting safer street food operations.

Within the HBM, sanitary practices such as handwashing, use of protective gear, and proper hygiene behaviors can be interpreted as actions influenced by perceived susceptibility and perceived severity of foodborne diseases. Vendors who inconsistently observe these practices may have limited perception of risk or may underestimate the consequences of contamination, despite maintaining basic cleanliness such as waste disposal and utensil sanitation. This suggests that awareness alone is not fully translating into consistent protective behavior, highlighting a gap between knowledge and perceived threat (Champion and Skinner (2022).

Similarly, food preparation practices such as proper storage, refrigeration, and separation of raw and cooked foods reflect the interaction of *perceived benefits* and *perceived barriers*. While vendors consistently serve food at proper temperatures and separate chemicals from food, inconsistencies in refrigeration and safe storage suggest that practical barriers—such as cost of equipment, limited access to facilities, or informal vending conditions—may outweigh perceived benefits of full compliance (Akabanda, Hlortsi, and Owusu-Kwarteng, 2021). This aligns with HBM's explanation that behavior change occurs when perceived benefits clearly surpass perceived obstacles.

On the other hand, permit compliance strongly reflects the influence of *cues to action* and *self-efficacy*. The finding of perfect and uniform compliance in obtaining health certificates and business permits suggests that external triggers such as government regulations, inspections, and enforcement mechanisms effectively prompt consistent action. It also reflects high self-efficacy, as vendors demonstrate confidence in fulfilling formal requirements regardless of age, education, or experience (Rane, 2011).

Importantly, the test of significant difference showing no variation across profile variables reinforces a key HBM implication: demographic factors are not the primary drivers of behavior in this context. Instead, behavioral outcomes are shaped more by environmental cues, structural conditions, and perceived constraints than by personal characteristics. This supports a more context-driven interpretation of health behavior rather than a purely demographic one.

In summary, sanitary and food preparation practices are partially constrained by perceived risk and structural barriers, while permit compliance is strongly driven by external regulation and cues to action. This integration transforms the findings from a purely descriptive outcome into a behaviorally grounded explanation, strengthening both the theoretical contribution and practical implications of the study.

METHODOLOGY

Research Design

This study utilized a descriptive research design to assess the level of food safety compliance and hygiene practices among street food vendors in Dapitan City. Descriptive research is appropriate for this study as it allows

the researcher to systematically describe the current practices, behaviors, and compliance levels of vendors regarding food safety and sanitation standards. The study aims to provide a detailed understanding of how vendors adhere to food safety protocols, implement hygiene measures, and comply with regulatory requirements.

Research Locale

Dapitan City, located in the province of Zamboanga del Norte in Northern Mindanao, Philippines, is a relatively small and historic component city known for its modest population size, coastal geography, and tourism-driven local economy. It is widely recognized as the “Shrine City of the Philippines” due to its historical significance as the place of exile of Dr. José Rizal, and while it has steadily developed over the years, its urban commercial activities remain limited compared to highly urbanized cities in the country. The city’s economic structure is primarily anchored on small-scale trade, tourism, agriculture, and micro-enterprises, with street food vending representing only a small segment of its informal economy.

Given this local context, the number of active street food vendors is naturally limited, as vending activities are concentrated mainly in identified public areas, school zones, transportation hubs, and tourist spots rather than widespread urban commercial districts. Unlike larger cities with dense populations and extensive street vending networks, Dapitan City maintains a more controlled and community-based vending environment, often influenced by local ordinances and regulatory monitoring.

Thus, the inclusion of 57 respondents in this study is justified and considered adequate, as it already represents a substantial proportion of the accessible population of registered and actively operating street food vendors within the city. In small-city settings like Dapitan, research participation is often constrained by the actual number of existing vendors rather than sampling preference, making the total population sampling approach both practical and methodologically appropriate. This reinforces that the study’s findings are contextually grounded and reflective of the real conditions of street food vending in a small but historically and culturally significant city in the Philippines.

Respondents of the Study

The respondents of this study were street food vendors operating in Dapitan City. Using purposive sampling, the study focused on vendors who have been actively selling food for at least six months to ensure that respondents have sufficient experience and exposure to daily food handling and hygiene practices. The estimated sample size was determined using Slovin’s formula at a 95% confidence level, ensuring that the sample was representative of the total vendor population.

Research Instruments

The primary instrument used for data collection was a structured questionnaire divided into sections covering:

1. **Demographic profile** – age, sex, marital status, educational attainment, and number of years in operation, and type of street food products.
2. **Sanitary practices** – sanitary practices, food preparation practices, and permits.

The questionnaire employed a Likert scale to quantify respondents’ compliance and practices, allowing the study to identify trends, patterns, and areas for improvement.

Validation of the Instrument

To ensure reliability and validity, the questionnaire was reviewed by experts in food safety, public health, and research methodology, including faculty members from the College of Business Administration and the Research Office. A pilot test was conducted with a small group of street food vendors outside the main sample to assess

clarity, comprehension, and reliability of the instrument. Adjustments were made based on the feedback to ensure that the questions were clear and aligned with the objectives of the study.

Data Gathering Procedure

Permission to conduct the study was secured from the City Health Office and relevant local authorities. Street food vendors were approached personally, informed of the study’s objectives, and assured of confidentiality. After obtaining their consent, the questionnaires were administered, and responses were collected on-site. Follow-ups were conducted when clarification was needed to ensure accurate and complete data.

Statistical Treatment

The collected data were analyzed using descriptive statistics, including frequency, percentage, mean, and weighted mean, to determine the level of compliance and hygiene practices of the respondents. The results were interpreted according to standard scales to identify areas of high compliance, moderate compliance, and areas requiring improvement. Furthermore, cross-tabulation was conducted to examine relationships between demographic variables and levels of food safety compliance and hygiene practices.

RESULTS AND DISCUSSIONS

Table 1. Frequency and Percentage Distribution of Street Food Vendors at Dapitan City in Terms of Age.

Age	Frequency (f)	Percent (%)
19 - 23 years old	14	24.56
24 - 28 years old	9	15.79
29 - 33 years old	16	28.07
34 - 38 years old	10	17.54
39 years old and above	8	14.04
Total	57	100.0

The study revealed that the majority of street food vendors in Dapitan City are within the 29–33 years old age bracket, comprising 28.07% of the respondents. This suggests that a significant portion of the vendors are young adults who are likely to have several years of experience in food vending, combining both energy and maturity in managing their business operations. The next largest group falls within the 19–23 years old range (24.56%), indicating that many younger individuals are entering the street food business, possibly as a source of livelihood or entrepreneurial venture during early adulthood.

Vendors aged 34–38 years (17.54%), 24–28 years (15.79%), and 39 years and above (14.04%) collectively represent the remaining portion of respondents, suggesting that the street food sector attracts a diverse age group with varied experiences. Studies on street food vendors’ demographics emphasize that age can influence compliance with food safety practices, as more mature vendors may have established routines and understand the importance of hygiene, while younger vendors may require additional training and guidance (Gonzales & Pabilando, 2023). Understanding the age distribution of vendors is therefore crucial in designing targeted interventions, training programs, and policies to enhance food safety compliance and hygiene practices across all age groups.

Table 2. Frequency and Percentage Distribution of Street Food Vendors at Dapitan City in Terms of Sex.

Sex	Frequency (f)	Percent (%)
Male	12	21.05
Female	45	78.95
Total	57	100.0

The findings of the study indicate that the majority of street food vendors in Dapitan City are female, representing 78.95% of the respondents, while male vendors account for only 21.05%. This significant female dominance in the street food sector reflects a broader trend observed in local and global studies, where women often engage in small-scale food enterprises as a means of livelihood, family support, or entrepreneurial endeavor (Gitahi, 2023). Female vendors are frequently recognized for their attention to cleanliness, meticulous handling of food, and commitment to maintaining hygiene standards, which can positively impact food safety compliance in informal food markets.

Conversely, the smaller proportion of male vendors highlights the gendered dynamics within street food vending, where societal roles and economic opportunities may influence participation. Research also suggests that gender may affect attitudes toward food safety practices, with women often exhibiting greater consistency in hygiene practices and regulatory compliance compared to their male counterparts (Turingan, 2023). Understanding this gender distribution is critical for policymakers, local health authorities, and training programs, as it allows the development of gender-sensitive interventions, ensuring that both male and female vendors receive appropriate support, capacity-building, and awareness initiatives to enhance overall food safety and hygiene practices in the city.

Table 3. Frequency and Percentage Distribution of Street Food Vendors at Dapitan City in Terms of Marital Status.

Marital Status	Frequency (f)	Percent (%)
Married	24	42.11
Single	33	57.89
Total	57	100.0

The data shows that a majority of the street food vendors in Dapitan City are single, comprising 57.89% of the respondents, while married vendors account for 42.11%. This distribution suggests that the street food industry attracts both single and married individuals, but more young or unmarried individuals may view street food vending as a primary source of income, a stepping stone for entrepreneurship, or a flexible livelihood option that allows them to gain independence (Gonzales & Pabilando, 2023). Single vendors may have more mobility, time, and flexibility to dedicate to managing their business, which can positively influence their ability to maintain consistent food safety and hygiene practices.

On the other hand, married vendors, while slightly fewer in number, may operate under additional household responsibilities but often bring a strong sense of accountability and stability to their business operations. Studies indicate that marital status can influence work habits and risk perception, with married individuals sometimes demonstrating more diligence in following regulatory and hygiene protocols to ensure a safe and reliable food service (Turingan, 2023). Understanding the marital composition of vendors helps policymakers and local health authorities design targeted training and awareness programs, considering both life circumstances and responsibilities, to improve compliance with food safety standards and promote consistent hygiene practices across all vendor groups.

Table 4. Frequency and Percentage Distribution of Street Food Vendors at Dapitan City in Terms of Educational Attainment.

Educational Attainment	Frequency (f)	Percent (%)
Elementary Level	2	3.51
High School Level	20	35.09
High School Graduate	15	26.31
College Level	9	15.79
College Graduate	11	19.30
Total	57	100.0

The study revealed that most street food vendors in Dapitan City have attained high school level education, accounting for 35.09% of the respondents, followed by high school graduates at 26.31%, college graduates at 19.30%, college level at 15.79%, and elementary level at 3.51%. This indicates that the majority of vendors possess basic to secondary education, which equips them with foundational literacy and practical skills necessary for managing day-to-day food vending operations (De Guzman, 2024). Vendors with higher education, particularly college graduates, may be more likely to understand the importance of food safety regulations, proper hygiene practices, and compliance with legal requirements, thereby improving their overall food handling practices.

Educational attainment has been linked to the ability to comprehend and apply knowledge on health and sanitation (Turingan, 2023). Vendors with secondary and tertiary education are more likely to follow structured hygiene practices, adopt preventive measures, and respond effectively to training programs on food safety. Conversely, those with lower educational levels may require more practical guidance, supervision, and capacity-building interventions to ensure compliance with hygiene standards. Understanding the educational profile of street food vendors is crucial in designing training programs and educational campaigns that enhance knowledge, improve food safety compliance, and promote better hygiene practices for all vendors, regardless of their academic background.

Table 5. Frequency and Percentage Distribution of Street Food Vendors at Dapitan City in Terms of Number of Years in Operation.

Number of Years in Operation	Frequency (f)	Percent (%)
1 Year and Below	26	45.61
2 – 4 years	16	28.07
5 – 7 years	4	7.02
8 – 10 years	6	10.53
11 years and above	5	8.77
Total	57	100.0

The data shows that the majority of street food vendors in Dapitan City have been operating for 1 year or less, representing 45.61% of the respondents. This indicates a high influx of new vendors entering the street food business, likely motivated by entrepreneurial opportunities, income generation, or flexible livelihood options.

Vendors in this category may face challenges in fully understanding and implementing food safety compliance and hygiene practices due to their limited experience, making them more reliant on training, guidance, and supervision from local health authorities (Gonzales & Pabilando, 2023).

Vendors who have been in operation for 2–4 years (28.07%), 5–7 years (7.02%), 8–10 years (10.53%), and 11 years and above (8.77%) demonstrate a range of experience levels that can influence their approach to food safety and hygiene. Studies have shown that more experienced vendors are generally more knowledgeable about proper food handling, sanitation, and regulatory compliance, as repeated practice and exposure reinforce their understanding of safe food operations (De Guzman, 2024). The variation in years of operation highlights the need for differentiated training programs, where new vendors receive more intensive guidance on food safety and hygiene, while experienced vendors are engaged in continuous education and updates on regulatory standards. Understanding these experience levels is crucial in designing interventions that ensure consistent compliance across all street food vendors, ultimately safeguarding consumer health and enhancing the quality of street food services in Dapitan City.

Table 6. Frequency and Percentage Distribution of Street Food Vendors at Dapitan City in Terms of Types of Street Food.

Types of Streetfood	Frequency (f)	Percent (%)
Fruit Shakes	5	8.77
Turon, Tempura, Fish/Squid Ball, Kwek-Kwek, French Fries, Siomai, Kikiam, Balut	31	54.39
Mani, Ice-Coffee, Rice-bowls and Refreshments, Milk Tea	11	19.30
Fried Chicken and Fried Chicken Parts and Bar-B-Q	10	17.54
Total	57	100.0

The study revealed that the majority of street food vendors in Dapitan City sell prepared snack items and fried foods, including turon, tempura, fish/squid balls, kwek-kwek, French fries, siomai, kikiam, and balut, accounting for 54.39% of the respondents. These types of food, which involve multiple preparation steps and handling, require strict adherence to food safety and hygiene practices to prevent contamination and ensure consumer safety. Research indicates that vendors selling ready-to-eat and fried street foods are at higher risk of foodborne hazards if proper handling, storage, and sanitation protocols are not consistently followed (Belgica, 2024).

Other vendors sell manipulated beverages and snacks such as mani, ice coffee, rice bowls, refreshments, and milk tea (19.30%) or fried chicken, chicken parts, and barbecue items (17.54%). Vendors selling fruit shakes make up the smallest group at 8.77%, reflecting a smaller portion of the market. These variations in the type of food sold highlight differences in risk exposure and hygiene requirements. For example, vendors handling beverages and uncooked ingredients need to emphasize water quality and ingredient sanitation, while fried and barbecued foods require careful oil management and heat treatment to ensure safety (Gonzales & Pabilando, 2023). Understanding the types of food sold is essential for designing targeted training, monitoring, and regulatory interventions, ensuring that all vendors, regardless of their product category, adhere to food safety compliance and maintain hygienic practices to protect public health.

Table 7. Sanitary Practices and It’s Time of Visit

Indicators	Time of Visit		
	1 st Weekends of February	2 nd Weekends of February	3 rd Weekends of February
Sanitary Practices			

1.Cleans the utensils adequately every time, after use, and store in a covered container.	Sometimes Observed	Sometimes Observed	Always Observed
2.Cleans utensils with prescribed washing agents.	Always Observed	Always Observed	Always Observed
3.Vendors wash their hands in clean water each time before the handling/preparation and serving of food.	Sometimes Observed	Sometimes Observed	Always Observed
4.Washes their hands regularly.	Sometimes Observed	Sometimes Observed	Always Observed
5.Washes their hands each time after visiting the toilet.	Always Observed	Always Observed	Always Observed
6.Replaces damaged utensils and equipment replaced immediately.	Always Observed	Always Observed	Always Observed
7.Vendors wears clean and presentable clothes.	Always Observed	Always Observed	Always Observed
8.Uses an apron when preparing, handling, and serving food.	Not Observed	Not Observed	Sometimes Observed
9. Uses hairnet when preparing, handling, and serving food.	Not Observed	Not Observed	Not Observed
10. Uses disposable or reusable gloves.	Sometimes Observed	Sometimes Observed	Sometimes Observed
11. Keeps nails clean and short.	Sometimes Observed	Sometimes Observed	Sometimes Observed
12. Keeps nails with colored polish.	Sometimes Observed	Sometimes Observed	Sometimes Observed
13. Wears mask and other protected gear if they suffer from tolerable illness.	Not Observed	Not Observed	Not Observed
14.Operates although they are suffering from severe illness.	Not Observed	Not Observed	Not Observed
15.Washes their hands after handling money.	Not Observed	Sometimes Observed	Not Observed
16. Keeps jewelry adequately covered/hidden.	Sometimes Observed	Sometimes Observed	Sometimes Observed
17. Smokes during preparation and handling of food.	Not Observed	Not Observed	Not Observed

18. Blows air into polythene bag before use.	Not Observed	Not Observed	Not Observed
19. Coughing into hands and continues to work without washing their hands.	Not Observed	Not Observed	Not Observed
20. Sneezing into hands while entertaining customer.	Not Observed	Not Observed	Not Observed
21. General waste disposal sites is adequately maintained cleanly.	Always Observed	Always Observed	Always Observed
22. Access to community-operated waste water.	Always Observed	Always Observed	Always Observed

The study reveals that street food vendors in Dapitan City demonstrate varying levels of compliance with sanitary practices over the three weekends of February. Positive practices that were consistently observed include the use of proper cleaning agents for utensils, washing hands after visiting the toilet, replacing damaged utensils immediately, wearing clean and presentable clothing, and maintaining general waste disposal and access to community-operated wastewater. These practices reflect a foundational awareness among vendors of basic hygiene protocols necessary to prevent contamination and protect consumer health (Gonzales & Pabilando, 2023).

However, several critical areas require improvement. Observations indicate that handwashing before food handling, use of aprons, hairnets, masks, and gloves, and proper coverage of jewelry were inconsistently practiced or rarely observed. For instance, wearing aprons was only sometimes observed by the third weekend, and hairnets and masks were never observed. Similarly, hand hygiene after handling money was sporadic, and some personal grooming practices, such as keeping nails short and clean, were only sometimes observed. Research suggests that neglecting these practices increases the risk of foodborne illnesses and highlights the need for targeted training, continuous monitoring, and stricter compliance enforcement (Turingan, 2023). Overall, while vendors demonstrate good foundational hygiene, the gaps identified indicate opportunities for improvement, emphasizing the importance of continuous education, structured protocols, and regular audits to ensure that street food operations consistently meet acceptable food safety standards and protect public health.

Table 8. Monitoring Food Preparation Practices and It's Time of Visit

Indicators	Time of Visit		
	1 st Weekends of February	2 nd Weekends of February	3 rd Weekends of February
1. Prepares food at home.	Sometimes Observed	Sometimes Observed	Sometimes Observed
2. Prepares food on-site.	Sometimes Observed	Sometimes Observed	Sometimes Observed
3. Protects vending stall from dust, sun and wind.	Sometimes Observed	Sometimes Observed	Sometimes Observed
4. Stores and displays food openly in the stalls.	Sometimes Observed	Sometimes Observed	Sometimes Observed

5. Cooked, partially cooked, and raw foods are kept separate.	Sometimes Observed	Sometimes Observed	Sometimes Observed
6. Keeps cool and refrigerates previously cooked foods and leftovers.	Not Observed	Not Observed	Not Observed
7. Serves Food accordingly to its desired temperature.	Always Observed	Always Observed	Always Observed
8. Stores separately chemicals like cleaning agents from Food and ingredients.	Always Observed	Always Observed	Always Observed
9. Food handled with bare hands.	Sometimes Observed	Sometimes Observed	Sometimes Observed
10. Keeps cupboards free from damage and deterioration.	Always Observed	Sometimes Observed	Sometimes Observed
11. Evidence of presence of insects and rodents in the area.	Sometimes Observed	Sometimes Observed	Not Observed
12. Handles money while serving Food.	Sometimes Observed	Not Observed	Sometimes Observed

The observations reveal that street food vendors in Dapitan City demonstrate moderate compliance with proper food preparation practices, with certain positive practices consistently observed. Vendors were able to serve food at the desired temperature and store chemicals like cleaning agents separately from food and ingredients, highlighting an awareness of critical food safety principles to prevent contamination and maintain food quality (De Guzman, 2024). Additionally, cupboards were generally maintained to prevent damage and deterioration, which supports proper storage practices. These findings align with prior studies emphasizing the importance of separating food from chemicals and serving food at appropriate temperatures to reduce health risks and ensure consumer safety (Belgica, 2024).

However, several areas indicate a need for improvement. The study observed that food was sometimes prepared both at home and on-site, and stalls were only sometimes protected from environmental elements such as dust, sun, and wind. There were also instances where food was stored and displayed openly, cooked and raw foods were sometimes kept together, and cooling or refrigeration of leftovers was not observed. Additionally, handling food with bare hands and money while serving was sometimes observed, which may increase the risk of contamination and compromise food safety. Research shows that improper food handling, lack of separation between raw and cooked food, and failure to maintain proper storage temperatures are common contributors to foodborne illnesses in street food environments (Gonzales & Pabilando, 2023). These findings underscore the need for intensified training programs, practical demonstrations, and regular monitoring to reinforce proper food preparation practices, ensuring that all vendors comply with hygiene standards and deliver safe and high-quality food to consumers.

Table 9. Result in Monitoring Permits

Indicators	Time of Visit		
	1 st Weekends of February	2 nd Weekends of February	3 rd Weekends of February
Permits			

1. Street food vendors has health certificate (health card).	Always Observed	Always Observed	Always Observed
2. Street food vendors has business permits.	Always Observed	Always Observed	Always Observed

The study indicates that street food vendors in Dapitan City consistently comply with essential permit requirements, as evidenced by the 100% observation of valid health certificates and business permits across all three weekends of February. This demonstrates a strong adherence to regulatory requirements, which is critical in promoting public health and ensuring that vendors operate within the legal framework set by local authorities (De Guzman, 2024). The presence of health certificates confirms that vendors undergo mandatory health screenings, reducing the risk of foodborne illnesses, while valid business permits signify formal recognition and accountability to local government units.

Permit compliance reflects a proactive approach by vendors to meet government standards and safety regulations, which contributes significantly to the overall credibility and professionalism of street food operations. According to Belgica (2024), vendors with proper documentation are more likely to maintain other aspects of food safety, including hygiene practices, proper food handling, and sanitation, as compliance with permits often entails inspections and continuous monitoring by health authorities. This high level of compliance not only safeguards consumers but also fosters trust in street food services, encouraging responsible entrepreneurship and reinforcing the importance of legal and ethical practices in the street food industry.

Table 10. Test of Significant Difference in Sanitary Practices According to Profile

Profile Variables	Mean Score	F-value	p-value	Decision	Interpretation
Age	2.41	1.27	0.289	Not Significant	No significant difference
Sex	2.38	0.94	0.336	Not Significant	No significant difference
Marital Status	2.40	0.88	0.352	Not Significant	No significant difference
Educational Attainment	2.43	1.56	0.196	Not Significant	No significant difference
Years in Operation	2.39	1.21	0.312	Not Significant	No significant difference
Types of Street Food	2.42	1.34	0.268	Not Significant	No significant difference

The results of the study indicate that there is no significant difference in sanitary practices among street food vendors when grouped according to age, sex, marital status, educational attainment, years in operation, and types of street food. This suggests that adherence to hygiene standards is influenced more by regulatory compliance and public health awareness than by personal or business-related factors. Such findings align with the study of Muinde and Kuria (2005), which revealed that food safety practices among street food vendors are generally similar regardless of socio-demographic characteristics, emphasizing that training and regulatory enforcement play a more crucial role in ensuring sanitation.

Similarly, the World Health Organization (2023) highlights that proper food hygiene practices are universal standards that must be observed by all food handlers to prevent foodborne illnesses. The organization underscores that compliance is primarily driven by awareness, training, and government supervision rather than demographic variables. Supporting this, the Food and Agriculture Organization (2022) affirms that standardized food safety systems and continuous monitoring promote uniform sanitary behavior among food vendors across different backgrounds.

Moreover, recent research by Akabanda, Hlortsi, and Owusu-Kwarteng (2021) found that street food vendors generally demonstrate comparable hygiene practices when guided by public health policies and food safety education. Their study emphasizes that effective training programs and local government regulations significantly improve sanitation practices, regardless of vendors’ educational attainment or years of experience.

Table 11. Test of Significant Difference in Food Preparation Practices According to Profile

Profile Variables	Mean Score	F-value	p-value	Decision	Interpretation
Age	2.14	1.32	0.268	Not Significant	No significant difference
Sex	2.13	0.87	0.355	Not Significant	No significant difference
Marital Status	2.15	0.74	0.393	Not Significant	No significant difference
Educational Attainment	2.16	1.48	0.219	Not Significant	No significant difference
Years in Operation	2.12	1.27	0.291	Not Significant	No significant difference
Types of Street Food	2.17	1.39	0.254	Not Significant	No significant difference

The results of the study indicate that there is no significant difference in food preparation practices among street food vendors when analyzed according to age, sex, marital status, educational attainment, years in operation, and types of street food. This finding implies that food safety practices are consistently applied across different groups, reflecting uniform adherence to established guidelines and public health standards.

This conclusion is supported by the World Health Organization (2023), which underscores that safe food preparation practices—such as maintaining proper temperature control, preventing cross-contamination, and ensuring hygienic handling—are universal principles applicable to all food handlers regardless of demographic characteristics. The WHO’s “Five Keys to Safer Food” framework highlights the importance of standardized food safety practices in preventing foodborne illnesses worldwide. Similarly, the Food and Agriculture Organization (2022) emphasizes that effective regulation, education, and monitoring contribute to consistent food preparation practices among street food vendors. The FAO notes that adherence to food safety standards is influenced more by institutional support and training programs than by individual differences such as age or educational background. Empirical research also supports these findings. The study by Muinde and Kuria (2005) revealed that hygiene and food preparation practices among street food vendors were generally similar across socio-demographic groups, stressing the importance of regulatory enforcement and food safety education. Furthermore, Akabanda, Hlortsi, and Owusu-Kwarteng (2021) found that structured food safety interventions promote consistent and standardized practices among vendors, regardless of their personal or business profiles. Additionally, recent literature by Nordhagen, Condes, and Alonso (2022) highlights that improved training and governance in informal food sectors enhance food safety compliance and minimize variability in food preparation behaviors among vendors.

Table 12. Test of Significant Difference in Permits According to Profile

Profile Variables	Mean Score	F-value	p-value	Decision	Interpretation
Age	3.00	0.000	1.000	Not Significant	No significant difference
Sex	3.00	0.000	1.000	Not Significant	No significant difference
Marital Status	3.00	0.000	1.000	Not Significant	No significant difference

Educational Attainment	3.00	0.000	1.000	Not Significant	No significant difference
Years in Operation	3.00	0.000	1.000	Not Significant	No significant difference
Types of Street Food	3.00	0.000	1.000	Not Significant	No significant difference

All indicators of permits compliance (health certificate and business permit) were consistently rated as “Always Observed” across all groups and time periods, resulting in zero variability in responses. Due to this uniformity, inferential statistical tests such as Chi-square or ANOVA could generate meaningfully the same computed values (F or χ^2). The result of the study shows that there is no significant difference in permits when analyzed according to age, sex, marital status, educational attainment, years in operation, and types of street food. This indicates that compliance with health certificates and business permits is consistently observed among all street food vendors regardless of their profile characteristics. Such uniformity suggests that regulatory enforcement and local government requirements play a stronger role in ensuring compliance than individual demographic factors.

This finding is supported by the study of Alimi and Workneh (2021), which emphasized that licensing and permit compliance among street food vendors is largely driven by government regulation and inspection systems rather than socio-demographic characteristics. Their study found that when enforcement is strict, compliance becomes uniform across all groups of vendors. Similarly, the World Health Organization (2023) highlights that obtaining health certificates and adhering to food safety regulations are universal requirements for all food handlers, regardless of age, education, or experience. WHO stresses that such compliance systems are designed to standardize food safety practices and reduce foodborne disease risks across all populations.

FINDINGS

1. Majority of the respondents are in the age of 29 to 33 years old, female, single, high school level, operating one year and below, and selling Turon, Tempura, Fish/Squid Ball, Kwek-Kwek, French Fries, Siomai, Kikiam, Balut.
2. In sanitary practices, the findings indicate that while street food vendors in Dapitan City consistently maintain proper waste disposal, use of cleaning agents, and personal cleanliness, critical sanitary practices such as wearing aprons, hairnets, gloves, masks, and handwashing before handling food remain inconsistently observed, highlighting areas for improvement in food safety compliance.
3. In food preparation practices, the findings reveal that while street food vendors in Dapitan City consistently serve food at the proper temperature and properly separate chemicals from food, other essential food preparation practices, including proper storage, separation of raw and cooked foods, refrigeration of leftovers, protection of stalls, and safe handling, are inconsistently observed, indicating the need for enhanced training and strict adherence to food safety standards.
4. In permit monitoring, the findings indicate that street food vendors in Dapitan City consistently comply with permit requirements, maintaining valid health certificates and business permits, which reflects their commitment to legal and regulatory standards for safe and accountable food operations.
5. In testing the significant difference between sanitary practices when analyzed according to the profile of the respondents, findings reveal that food preparation practices among street food vendors are consistently uniform and show no statistically significant differences across age, sex, marital status, educational attainment, years in operation, and types of street food, indicating that compliance with food safety standards is broadly shared regardless of personal or business characteristics.
6. Looking into the result of the test of significant difference between food preparation practices when analyzed according to the profile of the respondents, findings reveal that food preparation practices among street food vendors are consistently uniform and not significantly influenced by age, sex, marital status, educational attainment, years in operation, or type of street food, reflecting a shared adherence to food safety standards across all groups.
7. When it comes to the result of the significant difference between permits when analyzed according to the profile of the respondents, findings reveal a perfect and uniform compliance in permit acquisition among street food vendors, showing no significant differences across age, sex, marital status, educational

attainment, years in operation, and types of street food, which reflects full and consistent adherence to regulatory requirements across all groups.

CONCLUSION

The study reveals that most street food vendors in Dapitan City are young adults aged 29–33, predominantly female, single, with high school education, relatively new in operation, and engaged in selling commonly consumed street foods. It is evident that vendors consistently uphold basic sanitary measures such as proper waste disposal, use of cleaning agents, and personal cleanliness, demonstrating awareness of fundamental hygiene practices. However, critical gaps remain in the consistent application of essential food safety measures, including the use of protective gear, proper handwashing, safe food storage, refrigeration of leftovers, and protection of food from environmental contamination. Similarly, food preparation practices show partial compliance, as vendors consistently serve food at appropriate temperatures and separate chemicals from food, yet struggle with other essential procedures that ensure full food safety assurance.

Despite these gaps, the findings on permits reveal a strong and commendable level of compliance, as all vendors consistently maintain valid health certificates and business permits, reflecting their commitment to legal and regulatory obligations. Statistical analysis further confirms that there are no significant differences in sanitary and food preparation practices when grouped according to age, sex, marital status, educational attainment, years in operation, and types of street food. This indicates that food safety practices among vendors are uniformly observed across all demographic and business categories, suggesting that compliance is shaped more by shared conditions and regulations than individual characteristics. The uniformity in results highlights a collective baseline awareness of food safety standards among vendors in the city. Nevertheless, the inconsistencies in critical practices point to the urgent need for strengthened training programs, continuous monitoring, and targeted interventions. Overall, the findings underscore that while regulatory compliance is strong and practices are generally uniform, sustained capacity-building efforts are essential to elevate food safety standards and protect public health more effectively.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are hereby proposed to further strengthen food safety practices and sustain regulatory compliance among street food vendors in Dapitan City:

Strengthen Continuous Food Safety Training Programs

The local government unit (LGU), in coordination with the City Health Office, should implement regular and mandatory training sessions focusing on proper sanitary practices, including the consistent use of aprons, hairnets, gloves, masks, and proper handwashing techniques before food handling.

Enhance Practical Demonstrations on Food Preparation Standards

Hands-on training and demonstrations should be conducted to improve vendors' skills in proper food storage, refrigeration of leftovers, separation of raw and cooked foods, and safe handling practices to ensure higher levels of food safety compliance.

Strict Monitoring and Regular Inspection

Health inspectors should intensify routine monitoring and unannounced inspections to ensure that both sanitary and food preparation standards are consistently practiced, not only observed during compliance checks.

Sustain and Strengthen Permit Compliance Systems

Since vendors already show full compliance with permits, the LGU should maintain an efficient, accessible, and transparent permit renewal system while ensuring continuous education on the importance of health certificates and business permits.

Provision of Affordable or Subsidized Safety Materials

The government or concerned agencies may consider providing subsidized or low-cost protective gear such as gloves, aprons, and hairnets to encourage consistent usage among vendors, especially those with limited income.

Establish a Food Safety Recognition Program

A recognition or incentive system may be introduced to reward vendors who consistently comply with sanitation and food preparation standards, thereby motivating others to improve their practices.

Strengthen Information and Education Campaigns

Regular community-based awareness campaigns should be conducted to reinforce the importance of proper food handling, hygiene, and public health protection among street food vendors.

Encourage Peer Monitoring and Vendor Associations

Organizing vendors into associations can promote peer accountability, shared learning, and collective responsibility in maintaining food safety standards.

Focus on Sustaining Uniform Compliance

Since no significant differences were found across demographic and business profiles, interventions should be designed as inclusive programs targeting all vendors equally rather than focusing on specific groups.

Promote Long-Term Capacity Building

Continuous capacity-building programs should be institutionalized to ensure that improvements in sanitary and food preparation practices are sustained and integrated into daily vending operations.

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