

THE PERCEPTION OF LOCAL STREET FOOD VENDORS OF TANAUAN CITY, BATANGAS ON FOOD SAFETY

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Abstract

The fastest-growing industry in the world is in hospitality field that focuses on customer satisfaction. Part of this is the food service industry that is improving its existence for the past years. In hospitality industry, there are various kinds of businesses and one of them is “street food” that is not properly sanitized yet affordable and delicious. One major concern with this is the food safety. Food safety guides and educates people on the advantages and disadvantages of eating this kind of food. Food-borne illness is one of the main worries when it comes to eating street foods, which people do not want to experience. With this, the researchers want to provide knowledge and effective solutions to prevent food-borne illness and how to apply food safety practices. The researchers used various approaches in order to know the vendors’ perception on food safety, which are the descriptive quantitative and qualitative approaches. This research was conducted in Tanauan City, Batangas. Fifty-five vendors were interviewed using a survey questionnaire for them to provide accurate answers. While the researchers were interviewing the vendors, they were also observing the operations of the whole kiosk. In analyzing the data gathered, they used the Statistical Package for Social Sciences version 16.0. Based on the results, the researchers found out that there are some differences in the vendors’ perception on food safety based on their demographic profile. The researchers also found out that the vendors are doing different practices in their business even though they belong to a single association.

Keywords: *Food Safety, Street Food, Perception, Food-borne Illnesses*

INTRODUCTION

The hospitality industry is one of the most consistently growing industries that focus heavily on customer satisfaction. According to Rauch (2015), this time is poised to be the best year the hospitality industry has ever experienced. Entrepreneurs will be attracted to the opportunity of experiencing a record-breaking year ahead for both the revenue and the net income side of the equation.

The food service industry is also positively booming nowadays. Wolf, et al. (2013), stated that the boom will most likely to impact quick-service and fast-casual restaurants this year. Entrepreneurs enter food and beverage business due to its income potentials. There are various types of food establishment such as fine dining restaurant, fast-food chain, and/or street food stalls. The Filipino food takes on an obviously evolving nature, from the streets of Quezon City such as the street food that is more than just a convenience food source in the Philippines, to the five-star establishments of Makati. Tacio (2012) stated that it is an integral part of the landscape and culture of Filipinos. They are known to enjoy the average three meals a day. Street food is a significant part of urban food consumption for millions of low- and middle-income consumers in urban areas on a daily basis. It is inexpensive, accessible, and it provides a somewhat nutritious and balanced meal, if consumed properly. Yet, this is also one of the most harmful health factors in human food consumption. It is a segment of the food industry that is rarely scrutinized, regulated or reviewed for safety. It is common that cooking areas in street food industry are low in terms of environmental and sanitary standards.

Acabo, et al. (2010), stated that teenagers nowadays are fond of trying new dishes with obvious disregard to safety and food's content.

Because of such adventurous appetites, they often expose themselves to the risk of food-borne illnesses that are so commonplace in street food consumption. Street foods are known because of their affordability and enchanting tastes, but because of unsafe practices such as inadequate storage, reheating of food before sale, insufficient handwashing, and inappropriate cleaning of cooking utensils, these foods can become hazardous to our health.

Bhat (2000) reported that street foods are inexpensive and available that in many countries, they form an integral part of the diet because they are consumed with regularity and consistency across all income groups, particularly among the urban poor. Nevertheless, there are also several health hazards associated with them. These foods could be the main channel for transmission of severe and fatal diseases that could be life threatening. Contamination to these foods could result from pre- or post-cooking contamination from the food handlers. Street food vendors are often unlicensed, untrained in food safety and sanitation, and work under crude unsanitary conditions. Ramons (2011) explained that street foods such as *isaw* and IUD cause Trikinosis or Trichiniasis Trikinisis.

This research study benefits all the people who want to know all about food safety and its components. Also, future researchers benefit from this research because they can continue to widen this topic or use this study to gather references and knowledge on food safety.

Lyceum of the Philippines University–Laguna (LPU–L) benefits from this study because they can use this study to improve and innovate the curriculum they are offering for the College of International Tourism and Hospitality Management (CITHM). The future hoteliers and restaurateurs,

cruise liners, and also the tourism group will also benefit from this study because they can use the knowledge and learning in their future work.

The research team came up with the study on street food vendors' perception on food safety of the products they are selling. Thus, the researchers have been concerned with the safety practices of the area to know if there is significance on food safety. Hence, researchers took advantage of any opportunity to inform and educate them on the dangers of food-borne illnesses.

Review of Literature

Hospitality is the act of kindness in welcoming and looking after the basic needs of guests and/or strangers, mainly in relation to food, drink and accommodation. According to Brown (2011), it focuses on hospitality operations including hotels, restaurants, cruise ships, amusement parks, destination-marketing organizations, convention centers, country clubs and related industries. These businesses and/or institutions provide services that are “need-oriented” in a sense that it satisfies customers' demand which is food and beverage. It is a general term used in hospitality which usually represents the required food and beverage items in events, banquets or outdoor catering services.

As reported by Latham (1997), the food industry plays an important role in developing countries in meeting the food demands of the urban dwellers. Street foods feed millions of people daily with a wide variety of foods that are relatively cheap and easily accessible.

From the Philippine Street Foods (2015), also known as *Pagkaing Kalye* in Filipino, street food is a wide variety of inexpensive cuisine that you can buy from vendors or peddlers on the streets. It is essentially influenced

by other neighboring countries' dishes like Chinese and Japanese, taken to the next level and given a Filipino twist, though consumers have doubts to street foods due to risks associated with them.

Tacio (2012) stated that eating street foods may be cheap, but there are also dangers that can cause health problems. In addition to that, he reported a certain case of a woman in her 40s who suffered vomiting, scarred skin, and muscle pains after eating calamari. A series of laboratory tests conducted by the Bureau of Food and Drugs (BFAD) found out that there was a huge amount of formalin, a form of formaldehyde, a preservative, in the imported frozen squids. The contaminated calamari caused the adverse effects in the woman's body that circulated through her blood.

Street foods include a wide variety of inexpensive cuisine that you can buy from vendors or peddlers on the streets. Titus (2011) stated in her article that foods that are sold by street vendors are considered unsafe in the Philippines and should not be purchased. As noted by Center for Disease Control and Prevention (2012), street vendors often do not comply with safe and hygienic food handling practices, leading to a greater risk of a range of food-borne illnesses. In addition, it is often difficult to safeguard street foods from unhygienic acts of passers-by, such as sneezing or coughing near food.

The Food and Agriculture Organization (2015) reported the risk of serious food poisoning outbreaks that are linked to street foods. It remains as a threat in many parts of the world. As they said, "a lack of knowledge among street food vendors about the causes of food-borne diseases is a major risk factor." Various studies identified the sources of food safety issues that may result in food-borne illness. It is usually a result of exposure to harmful microorganisms. Comia (2011), a gastroenterologist and associate professor at the U.P. College of Medicine, asserted the common illnesses linked to

ingestion of contaminated street food as amoebiasis, typhoid fever, and hepatitis A. Gastrointestinal infections are usually present with symptoms of abdominal pain, diarrhea, fever, and vomiting.

According to Abdussalam (2010), a very important practice in food preparation safety is ensuring that raw and cooked foods are kept separate especially if there are no further intentions in processing or heating. A common mistake is often caused by simply overlooking on proper storage and sensible hygiene practices such as cleaning of hands and/or equipment. In street food where food storage and refrigeration are often absent, the proper handling of prepared foods is critical to avoid food spoilage and deterioration. The spoilage or even contamination of prepared street food will often lead to toxin formation, pathogen growth and/or recontamination. All cookware, utensils, and other related cooking paraphernalia used in street food preparation must be maintained and routinely checked to ensure avoidance of any possible contamination.

The use of inappropriate materials combined with poor sanitation will result in buildup of residues that leads to microbial growth and an increased likelihood of contamination. Even after the condition of the equipment is addressed, it is critical that cooks and food handlers emphasize the processes of cooking and food handling such as simple storage to avoid cross-contamination from raw materials. All prepared foods should be held and placed in clean containers for protection against contamination due to unclean surfaces and exposure to hazardous materials.

In relation to food safety, inadequate refusal to disposal facilities or practices leads to accumulation of hazards. It leads to an increased pest population and results in an increased risk of food contamination. In many cases, the vending sites are not included in the city or town plans; therefore,

services such as garbage collections are not available. City authorities often encounter a dilemma whether they will imply legal operations or not because vending operations are often illegal. Most of the time, vendors do not contribute financial support towards maintenance of infrastructure and public utility services; therefore, they are not entitled to have legitimate support. Those cases highly contribute to further deterioration of hygienic condition of the area where the foods are merchandised.

Objectives of the Study

The main goal of the study was to gather information regarding street food vendors' perception on food safety of their products. Moreover, the researchers aimed to:

1. Determine the demographic profile of local street food vendors in terms of:
 - 1.1 Age,
 - 1.2 Gender,
 - 1.3 Educational attainment,
 - 1.4 Monthly income, and
 - 1.5 Years of experience as a street food vendor;
2. Know the perception of street food vendors on food safety in connection with:
 - 2.1 Food safety practices towards ingredients and products,
 - 2.2 Vendors' hygiene,
 - 2.5 Food preparation safety, and

- 2.6 Environmental exposure to food; and
3. Determine the differences between vendors' perception in terms of food safety practices, hygiene, food preparation and environmental exposure, and their demographic profile when grouped according to their age, gender, educational attainment, monthly income, and years of experience as a vendor.

Conceptual Framework

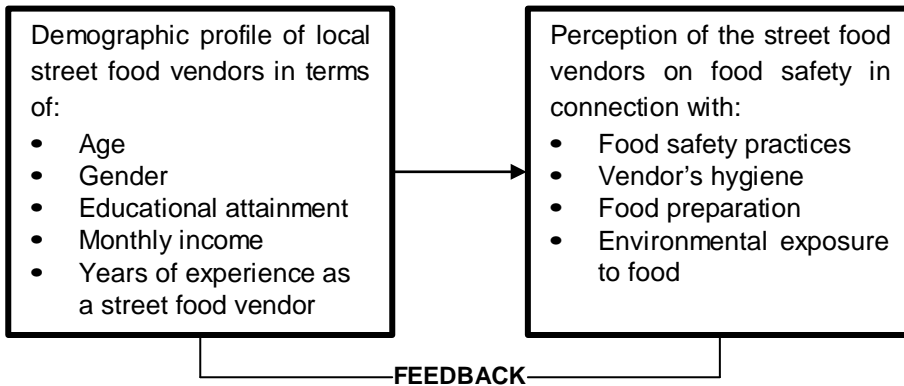


Figure 1. Conceptual Framework

Figure 1 shows the demographic profile of the respondents and their perception when it comes to food safety. It aims to identify the relationship between the demographic profile such as age, gender, educational background, monthly income and years of their experience as a vendor, and the respondents' perception on food safety in terms of their food safety practices, vendors' hygiene, food preparation, and the environmental exposure of their products. Food safety practices are specific food handling controls related to the receipt, storage, processing, display, packaging, transportation, disposal, and recall of food. Other requirements relate to the skills and knowledge of food handlers and their supervisors, the health and

hygiene of food handlers, and the cleaning, sanitizing and maintenance of the food premises and equipment within the premises. If complied with, these requirements will ensure that food does not become unsafe or unsuitable. Vendors' hygiene refers to conditions and measures necessary to ensure the safety of food from production to consumption. It is very important that vendors must have knowledge of hygienic practices because if not, the quality of food that they are offering to their consumers will suffer. Food preparation is a very important matter in food safety because it may help to stop harmful bacteria from spreading and growing. Environmental exposure of food is the kind of protection when foods are kept away from harm from the environment where foods are placed. Vendors should have the knowledge to protect their food to be able to offer quality food to their consumers. The researchers want to prove that even though the vendors belong to a single association, each one of them follows different practices compared to other vendors who are also selling in Tanauan City, Batangas.

METHODOLOGY

Research Design

The researchers used the descriptive quantitative and qualitative approaches. According to Penwarden (2014), it is conclusive in nature as opposed to exploratory. He stated that descriptive research gathers quantifiable information that can be used for statistical inference on your target audience through data analysis. Quantitative approach is used to analyze variables.

According to Willis from the Marketing Donut (2009), quantitative research includes surveys and customers questionnaires that help small firms to improve their products and services by enabling them to make informed decisions.

Trochim (2006) described qualitative approach as a general way of thinking about conducting qualitative research. It describes, either explicitly or implicitly, the purpose of the qualitative research, the role of the researchers, the stages of research, and the method of data analysis.

Research Locale

The researchers conducted a survey interview at the concessionaire areas in Tanauan City, Batangas, a group of concessionaire stands that offers various types of roasted and/or grilled foods and the likes such as *isaw*, barbeque, and *palamig*. Fifty-five small entrepreneurs sell their product at a low-sanitized wet market. Garbage and animals were scattered around the place, while hundreds of people are wandering there every day, making it as one of the most visited place in the city. With that idea, authorities find it hard to regularly maintain cleanliness in the area that results in an unbalanced food safety.

Participants of the Study

All 55 street food vendors in Tanauan City, Batangas were the respondents of the study. They have different demographic profiles, making the study more informative. The focus of the study was to evaluate the perception of the vendors towards the food safety of their food product.

Data Collection Tools

Survey questionnaires were used as a tool to gather information. The survey questionnaire consists of researcher-made questions consisting of four sub-categories that are in line with food safety. The languages used were English and Filipino/Tagalog to avoid language barrier. Options were formed through four-point Likert Scale, where: “4” represents as Always, “3” as Sometime, “2” as Seldom, and “1” as Never. It was verified by four

professionals: the statistician, research adviser, research professor, and grammarian. The researchers also conducted interview with the respondents to obtain deeply their insights on food safety.

Data-Gathering Procedure

The researchers used the survey questionnaire to ask the vendors their perception on food safety. They also conducted a one-on-one interview with the vendors and gathered deeper insights on the subject matter.

Data Analysis

The researchers used various formulas like frequency distribution, weighted mean, standard deviation, and analysis of variance (ANOVA) test. Even though the researchers used various formulas, the results were still processed through the use of Statistical Package for the Social Sciences version 16.0 (SPSS).

Norusis (2009) described SPSS Statistics 16.0 as a comprehensive system for analyzing data. SPSS can provide data from almost any types of file and use them to generate tabulated reports, charts, and plots of distributions and trends, descriptive statistics, and complex statistical analyses. SPSS makes statistical analysis more accessible for the beginner and more convenient for the experienced user. Simple menus and dialog box selections make it possible to perform complex analyses without typing a single line of command syntax. The data editor offers a simple and efficient spreadsheet-like facility for entering data and browsing the working data file.

RESULTS AND DISCUSSIONS

This chapter presents the findings of the study including the analysis and interpretation of data collected. Data are presented in tabular form and

interpreted following the sequence of answering specific questions of the problem.

Table 1. Vendors' Perception in Terms of Food Safety Practices in Relation to Socio-Demographic Profile

Indicators	Mean	Verbal Interpretation
Usage of plastic wraps, foils and covers	3.45	Effective
Timeliness of delivery of raw materials	3.71	Very Effective
Quality of raw materials	2.73	Effective
Extensive processing of ingredients	2.56	Ineffective
Total	3.11	Effective

Legend: 4.00-3.60: *Very Effective*; 3.59-2.60: *Effective*;
2.59-1.60: *Ineffective*; 1.59-1.00: *Very Ineffective*

Table 1 shows the vendors' perception on food safety practices based on their demographic profile. It is displayed that the highest indicator is timeliness of the delivery of raw materials. Street food vendors have their different practices when it comes to receiving their raw materials from their respective suppliers, or the ones who sells them the raw materials they need for their daily operations.

According to the Department of Health (2013), the microbial contamination can be found in places of preparation, utensils and raw ingredients, time and temperature abuse of cooked foods, and personal hygiene of vendors. With that idea, food safety is the assurance that foods will not cause harm to consumers when eaten. Extensive processing of ingredients does not really matter for the vendors. This indicator got the lowest rating from the vendors' perception. They do not use any kind of

process in cleaning their raw materials because they are not aware on what will happen if they do not follow the usual process. The World Health Organization (2006) explained food as inherently safe particularly if it has a history of traditional use. However, the application of unfamiliar processes, technologies and poor handling may render food to be unsafe for consumption.

Table 2. Vendors' Perception in Terms of Vendors' Hygiene in Relation to Demographic Profile

Indicators	Total	Verbal Interpretation
Washing of hands	3.30	Effective
Changing of attire	2.95	Effective
Exposure of food to food handlers	2.70	Effective
Work under health conditions	2.91	Effective
Presence in the workplace while on restroom breaks	1.84	Ineffective
Total	2.74	Effective

Legend: 4.00-3.60: Very Effective 3.59-2.60: Effective
2.59-1.60: Ineffective 1.59-1.00: Very Ineffective

Table 2 shows the vendors' perception on their personal hygiene based from their demographic profile. It shows that washing of hands is the highest indicator when it comes to personal hygiene. Everyone knows that hands are the basic tool in preparing and utilizing the ingredients from their storage until the time they are ready for selling. As noted by the Centers for Disease Control and Prevention (2012), street vendors often do not comply with safe and hygienic food handling practices, leading to a greater risk of having food-borne illness. In addition, it is often difficult to safeguard street food from unhygienic acts of passersby, such as sneezing or coughing near the food. Meanwhile, the lowest indicator is the presence in the workplace

while on restroom breaks. Most of the vendors do not have their restroom breaks because they are manning their products, ensuring that it is safe from any harm that may lead to risk people may encounter. Vendors are aware that their place is unsanitized, so they have to protect their reputation in order for them to attract patrons in their place.

Table 3. Vendors' Perception in Terms of Food Preparation in Relation to Demographic Profile

Indicators	Total	Verbal Interpretation
Cleanliness of utensils	3.58	Effective
Methods of recycling towards ingredients	3.51	Effective
Waste disposal	3.09	Effective
Temperature of the ingredients	3.00	Effective
Storing cooked products before selling	2.75	Effective
Combination of cooked foods and raw foods	1.67	Ineffective
Total	2.93	Effective

Legend: 4.00-3.60: *Very Effective* 3.59-2.60: *Effective*
2.59-1.60: *Ineffective* 1.59-1.00: *Very Ineffective*

Table 3 shows the vendors' perception in terms of food preparation based from their demographic profile. It shows that cleanliness of utensils has a great factor on vendors. It is clearly obvious that even vendors are aware that they must observe cleanliness on things that they are using in selling their products to ensure that no harmful organisms are present. According to the DOH (2013), the microbial contamination can be found in places of preparation, utensils, raw ingredients, time and temperature abuse of cooked foods, and personal hygiene of vendors. In relation to this, the combination of cooked foods and raw food got the lowest rating based on the

indicator. Meaning, vendors are unaware that mixing raw food and cooked food can accumulate various threats. It should always be separated because microorganism can multiply based on the temperature and their critical control points. According to Abdussalam (2010), a very important practice in food preparation safety is ensuring that raw and cooked foods are kept separate especially if there are no further intentions of processing or heating. A common mistake is often caused by simply overlooking the proper storage and sensible hygiene practices such as cleaning of hands and/or equipment.

Table 4. Vendors' Perception in Terms of Environmental Exposure to Food in Relation to Demographic Profile

Indicators	Total	Verbal Interpretation
Maintenance of water reservoirs	3.56	Effective
Maintenance of cooking materials	3.49	Effective
Prevention of smokers in the workplace	2.76	Effective
Work under environmental condition	2.65	Effective
Usage of chemical cleaners	1.75	Ineffective
Total	2.85	Effective

Legend: 4.00-3.60: *Very Effective* 3.59-2.60: *Effective*
2.59-1.60: *Ineffective* 1.59-1.00: *Very Ineffective*

Table 4 shows the vendors' perception in terms of environmental exposure to food based from their demographic profile. It shows that the maintenance of water reservoirs is very important. Water is one of the basic tools that vendors use in order wash their hands, clean their surroundings and tools in cooking, and preparing their products. If their containers are infected with any harmful organism, it may lead to food-borne illness that people do not want to experience.

Remize (2014) explains the hygienic aspects of street food vending as a major concern for food control officers. Vending stands are often crude structures. Running water, washing facilities, and toilettes are often unavailable. Improved safety of street foods among vendors can be achieved through raising an awareness programs with the involvement of local authorities, government departments, consumer organizations, standard setting bodies, and non-government organizations. In line with this, the usage of chemicals is not that much used by the vendors. They are much known on using just a simple cleaning product in order for them to maintain cleanliness of their tools and equipment. They do not just rely on the benefits of using strong chemicals, but they are foreseeing the affordability of the cleaning products they are using because they do not earn much money to buy cleaning products that are expensive.

Table 5. Analysis of Variance for Age

Indicator	Value	Significance
Combination of cooked foods and raw foods	0.042	Significant
Temperature of ingredients	0.029	Significant
Presence on the workplace while CR breaks	0.016	Significant
Extensive processing of ingredients	0.006	Highly Significant
Prevention of smokers in the workplace	0.001	Highly Significant
Maintenance of water reservoir	0.001	Highly Significant

Table 5 shows the analysis of variance for age. It shows that vendors have different perceptions when they are grouped according to their age. Extensive processing of ingredients, prevention of smokers in the workplace, and maintenance of water reservoirs are highly significant to them. Based on this result, vendors have their ways of maintaining good quality products.

People nowadays also have different ways on how to conserve, maintain and prevent harmful organisms. Presence in the workplace while on restroom breaks, combining raw and cooked food, and temperature of ingredients are significant to vendors' perception when grouped according to their age.

Table 6. Analysis of Variance for Gender

Indicator	Value	Significance
Storing cooked products before selling	0.044	Significant

Table 6 shows the analysis of variance for gender. It is stated that storing cooked products before selling is not a big issue for the vendors. When the researchers interview the vendors, they usually sell immediately their products to their consumers because they want to sell fresh goods. They do not want the quality of their products to suffer so they sell it immediately. They want the food to be served freshly cooked.

Table 7. Analysis of Variance for Educational Background

Indicators	Value	Significance
Waste Disposal	0.045	Significant
Extensive Processing of Ingredients	0.034	Significant
Usage of Chemical Cleaners	0.008	Highly Significant
Maintenance of Water Reservoirs	0.008	Highly Significant

Table 7 presents the analysis of variance for the educational background. It is displayed that usage of chemical cleaners and maintenance of water reservoirs has high significance to the vendors when they are grouped according to their educational background. It is clearly stated that vendors practice different techniques in cleaning and maintaining their

equipment in cooking and storing. They do not have the same practices that usual organization is doing. Extensive processing of ingredients and waste disposal are significant. Some vendors practice easy ways of cleaning and disposing their products during and after their day-to-day operations.

Table 8. Analysis of Variance for Monthly Income

Indicators	Value	Significance
Usage of chemical cleaners	0.048	Significant
Cleanliness of utensils	0.036	Significant
Prevention of smokers in the workplace	0.031	Significant
Maintenance of cooking materials	0.003	Highly Significant
Washing of hands	0.000	Highly Significant

Table 8 shows the analysis of variance for the monthly income. Washing of hands and maintenance of cooking materials are highly significant. Vendors stated that they always wash their hands to be safe because they are exposed to different kinds of harmful organisms. Also, they seldom replace their cooking materials because of money matters. What they do is to keep their materials out of any accident so as to have them in good condition when in use.

Table 9. Analysis of Variance for Years of Working Experience as a Vendor

Indicators	Value	Significance
Washing of hands	0.016	Significant
Maintenance of water reservoir	0.000	Highly Significant

Table 9 displays the analysis of variance for the years of working experience as a vendor. It shows that maintenance of water reservoirs is highly significant. Vendors are usually doing different practices in maintaining their water containers. Washing of hands is significant for them to practice food safety. Some of them frequently wash their hands to be protected from harmful organisms that can accumulate in the products they are selling

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Upon doing the survey interview, perceptions of street food vendors were studied from which the researchers found out that the highest rated indicator (towards food safety practices) is timeliness of delivery. Meanwhile, the lowest rated indicator is the extensive processing of raw materials. In terms of food cooking processes, respect to time is important while additional process in cooking affects Tanauan street food vendors' products. In terms of indicators towards vendors' hygiene, the highest rated indicator is washing of hands. In food processing, hands are the ones which are mostly exposed to food. However, the presence in the workplace even during restroom breaks is the lowest rated indicator. Regarding food preparation, the highest rated indicator is cleanliness of utensils while the combination of raw and cooked foods is the lowest rated indicator. Clean utensils will positively affect the products. On the other hand, the combination of raw and cooked foods might undergo food contamination. Lastly, the environment exposure of foods towards food safety exhibited that maintenance of water reservoir is highly needed by the respondents, that is why it is the highest rated indicator. In contrast, usage of chemicals has the significant difference towards food safety. A clean water reservoir will reduce vendors' expense whereas usage of chemicals may harm customers.

Recommendations

The researchers highly recommend that the administration of the workplace must be stable from time to time. Having consistent good procedures should be followed. Garbage bins should not be placed beside the cooking area. It should be at least five meters away.

In terms of dress code, it is ironic that a juice vendor wears make up and nice clothing while grilled food vendors wears rug-like clothing. The researchers suggest that the vendors wear uniform or even just a clean shirt with a logo of their association. With that idea, at least they will establish camaraderie and uniformity.

The researchers also recommend starting a simple informative checklist of hygienic practices. This checklist will evaluate the food safety practices of the street food vendors to emphasize the implementation of good hygiene standards. This could also help them to map out a program for food safety.

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