

FOOD SAFETY AND SANITATION PRACTICES AMONG KARENDERYAS IN POBLACION CATEEL

Judy Ann S. Empeño, Ivy Aubrey T. Sango, Rowena S. Monsalod

Department of Bachelor of Science in Business Administration - Major in Financial Management, Davao Oriental State University - Cateel Extension Campus, Cateel, Davao Oriental, Philippines, 8205

ABSTRACT

The Code on Sanitation (Presidential Decree No. 856) is a Philippine law that provides guidelines and standards for the promotion and maintenance of environmental health and sanitation in the country. It also helps to ensure that businesses and other organizations comply with best practices in sanitation, which can promote economic development and growth. Its implementation and enforcement are critical to ensuring that the benefits of the code are realized by all Filipinos, particularly those in underserved and marginalized communities. Most of all, it is essential to ensure the safety of the public in relation to food consumption and to prevent the spread of food-borne illnesses. With this, the purpose of the study was to assess the level of compliance of Karenderyas, small food establishments in the Philippines. The study used a quantitative research with researcher-made questionnaire to gather the data. The questionnaire will also undergo reliability and validity testing through a pilot test study before being administered to the actual respondents of the research study. This study will involve 50 respondents – 30 workers and 20 owners – from a total of 50 Karenderyas in Poblacion Cateel through convenience sampling. Moreover, the researchers will use Mean and Pearson product by analyzing the data.

Keyword: *Food safety, sanitation practice, code on sanitation*

1. INTRODUCTION

Food is an essential basic need, a vital component of physical health and happiness, and its production, preparation, and consumption are essential for maintaining life Voola, et al., (2018). It is necessary for life, but it can only fulfill such a significant function if it is secure enough to be consumed. Additionally, it can be described as anything that can be eaten, whether it be in a natural or artificial form, and is considered to be safe for human consumption Burntte, et al., (2018). Karenderya appears to be getting the short end of the business stick because food comes in a wide range of quantities, kinds, and prices.

Numerous different restaurants have supplied meals and other services over the years. Nowadays, a lot of individuals in the Philippines like to eat at the Karenderya. Customers in the karenderya are most likely to be students, workers, truckers, and merchants. The proprietors will be able to implement and practice adequate sanitation with regards to food selection and food preparation, and these people will benefit from it by receiving safe and appropriate nutrients from the food. Additionally, the karenderya adhere to fundamental requirements for maintaining their health and sanitization techniques. To keep food safe and nutritious, the Karenderya must be kept clean and managed properly to stop the spread of specific germs that cause sickness.

In addition, a Karenderya is a tiny restaurant (often a stall) in the Philippines where customers can freely select from a broad array of cuisine served in casseroles or other containers. Also, it stands out as a tiny restaurant Monterio, et al., (2012). Filipino Karenderya and restaurants have assimilated Filipino culture. Without this modest restaurant, everyday living for Filipinos would be quite different and very expensive (Lillford & Hermansson, 2021).

Meanwhile, implementing this degree of food sanitation starts with the procurement of various food items and concludes with the appropriate preservation of leftovers for later use Sultana, et al., (2013). Preventing food contamination is one of the most crucial components of practicing food safety. A big part of preventing food contamination is making sure foods are stored correctly. Basic kitchen hygiene precautions are a crucial part of any food safety plan Marriott, et al., (2012). High standard of cleanliness should be maintained in its daily operation to make sure that foods served to the consumer are sanitary prepared and are therefore safe for consumption (Zain & Naing, 2012).

Thus, customers patronize good in cleanliness and sanitation in food business. In addition, having permit in an establishment is also a necessary. Wherein, food safety is crucial to opening a restaurant and to keeping it running. All restaurants must pass a county restaurant inspection that focuses heavily on food safety prior to opening. Restaurants that do not meet strict health code requirements are not allowed to open.

Karenderyas in Cateel is one of the factors why the people here are very productive, however, some perceive Karenderyas do not pass with the food safety and sanitation standards. With this, the researchers aim to determine the level of food safety and sanitation practices among Karenderyas in Poblacion, Cateel, Davao Oriental. This will be relevant since most of the food business in Cateel are Karenderyas. Also, this research will enable to provide evidence-based information pertaining to the state of the food safety and sanitation of Karenderyas in Cateel knowing that this paper so far focuses on the said topic.

1.1 Statement of the Problem

1. What is the profile of the respondents in terms of:

A. Sex;

B. Age; and

C. Role in the industry?

2. What is the level of food safety and sanitation practices among karenderyas in Poblacion Cateel in terms of :

A. Construction of premises,

a.a floors,

a.b walls,

a.c ceilings

B. Maintenance of premises,

b.a regular checks,

b.b space and access

C. Toilet provision,

c.a adequate and clean toilet facilities

D. Hand washing facilities,

d.a wash-hand basins,

d.b wash-hand basin maintenance

E. Water supply,

e.a water quality,

e.b water treatment

F. Solid and liquid waste management,

f.a solid waste management,

f.b liquid waste management

G. Wholesomeness of food,

- g.a dry storage of non-perishable food,
- g.b refrigerated storage of perishable food

H. Protection of food/s,

- h.a food handlers,
- h.b food handling

I. Vermin control,

- i.a controlling pets, pests, insects, birds, vermin, and rodents

J. Cleanliness and tidiness,

- j.a maintenance of clean condition,
- j.b maintenance of tidy condition

K. Personal cleanliness,

- k.a good hygiene practices

L. Housekeeping and management,

- l.a conformity of premises,
- l.b adequate supervision of staff and customers

M. Condition of appliance/s and utensils,

- m.a control, design, and maintenance

N. Sanitary condition of appliance/s and utensils,

- n.a food service sanitation,
- n.b equipment and utensils sanitation

O. Disease control,

- o.a food handlers,
- o.b health certificate

P. Miscellaneous

- p.a sanitary permit display,
- p.b sanitation standard rating display?

3. Is there any significant difference on the level of Food Safety and Sanitation Practices among Karenderyas in Poblacion Cateel when grouped according to:

- A. Sex;
- B. Age; and
- C. Role in the Industry?

1.2 Scope and Limitation

The study focused on Food Safety and Sanitation Practices among Karenderyas in Poblacion Cateel, Davao Oriental. The data has been gathered through convenience sampling technique among the owners and workers in the karenderya. In this sampling technique, which focuses on gaining information from participants who are convenient for the researcher to access. The availability at a given time, or willingness to participate in the research. The study will use sanitary inspection of food establishments checklist, namely, Construction of Premises, Maintenance of Premises, Toilet Provision, Hand

washing Facilities, Water Supply, Liquid Waste Management, Solid Waste Management, Wholesomeness of Food, Protection of Food/s, Vermin Control, Cleanliness and Tidiness, Personal Cleanliness, Housekeeping and Management, Condition of Appliance/s and Utensils, Sanitary Condition of Appliance/s and Utensils, Disease Control, and Miscellaneous.

1.3 Theoretical Framework

The Presidential Decree No. 856, s. 1975 was theoretical framework that has been utilized in this paper. The decree has a total of one hundred six (106) sections. The researchers has only use seventeen (17) inclusions under the adoption of the Code on Sanitation by the late president, President Ferdinand E. Marcos, on December 23, 1975, represents a crucial turning point in the development of our nation's health and sanitation initiatives.

Whereas, the health of the people, being of paramount importance, all efforts of public services should be directed towards the protection and promotion of health; and with the advance in the field of sanitation in recent years, there arises the need for updating and codifying our scattered sanitary laws to ensure that they are in keeping with modern standards of sanitation and provide a handy reference and guide for their enforcement.

When needed, finding them has frequently been a difficult and time-consuming task. It was obvious that there was a pressing need to gather all current public health laws and modernize them so that they were actually responsive to the requirements of the country today Ruel, et al., (2013).

Significant contributions from numerous ministries, agencies, and offices of the national government as well as numerous civic and professional organizations are represented in the code's various stages of development Chen, et al., (2013). The Regional, Provincial, and City Health Offices, the National Environmental Protection Commission, the Metropolitan Water and Sewage System, the Population Commission, the Executive Departments of Labor, Natural Resources, Agriculture, Education, and Finance, the Philippine Public Health Association, the League of Public Health Engineers, the Philippine Society of Sanitary Engineers, and numerous other organizations are notable among them Pescosolido, et al., (2013).

The decree states as stated by Brush (2013), because public health is of the utmost importance, all efforts should be made to protect and promote it; however, given recent advancements in sanitation, it is now necessary to update and codify our disparate sanitary laws in order to ensure that they are in line with contemporary standards of sanitation and to serve as a useful reference and guide for their enforcement. By focusing public health services on the promotion and protection of people's health, this Code on Sanitation also aims to improve the way of life for Filipinos Lizzi, et al., (2014).

Meanwhile, the inclusions of the aforementioned sections includes: Construction of Premises, Maintenance of Premises, Toilet Provision, Hand washing Facilities, Water Supply, Liquid Waste Management, Solid Waste Management, Wholesomeness of Food, Protection of Food/s, Vermin Control, Cleanliness and Tidiness, Personal Cleanliness, Housekeeping and Management, Condition of Appliance/s and Utensils, Sanitary Condition of Appliance/s and Utensils, Disease Control, and Miscellaneous. Also, they are known as the sanitary requirement for a food establishment, which in this paper, the Karenderyas, which will be rated in order for them to have a permit to provide food and services.

Construction of the Premises. The decree specifies that the site must be far from potential annoyance sources and that only sturdy building materials are permitted. Flooring must be made of supple, waterproof materials Rosalem (2019). All work spaces must have adequate ventilation and 10-foot candles of lighting. Articles that need to dry must be safeguarded from sources of contamination and provided with enough drying facilities (Zapata, 2015).

The decree further specifies that food establishments must be built in compliance with the following guidelines: No individual shall use any room or location for or in connection with the preparation, storage, handling, or sale of any article of food which is or has been used for any purpose that is likely to contaminate the food or negatively impact its wholesomeness or cleanliness, or which is ever used or in direct connection with a sleeping apartment or toilet in which any animal is kept. In department shops or other multifunctional business premises, food may only be manufactured, prepared, cooked, stored, or sold in the space set aside expressly for said purpose and for which a sanitary permit has been given (Pascual & Abenis, 2016).

Moreover, no sanitary permit shall be issued for any premises to be used for the preparation, handling and sale of food unless it is constructed in accordance with the following requirements:

Floors. All angles between the floors and walls must be rounded off to a height of at least 3 inches (7.62 cm) from the floor or 11 inches (28.4 cm) from the wall (Besana & Paller, 2013). The flooring according to Maranan, et al (2012), must be made of concrete or another impermeable, easily cleaned material that is resistant to

wear and corrosion. built of wood with floorboards that are dovetailed or have tongue-and-groove joints, laid on a solid foundation, and tightly clamped together, all angles between the floor and walls must be rounded off to a height of 3 inches (7.62 cm), or built in accordance with the requirements of this clause and subclause, and the floor must be covered with linoleum, rubber with a smooth surface, or another similar material that is glued to the floor with cement or suitable adhesive.

In areas of the premises where such carpets or coverings can be effectively cleaned and maintained, floors may be covered with carpets or other floor covering with the written consent of the local authorities Cheshire, et al., (2013).

Walls. The inside surfaces of walls must be made of dust-proof materials, be smooth, even, non-absorbent, and easily cleanable without causing harm to the surface. (Wolderchoks & Yetayal, 2013) stated that, the walls must be built of impervious, non-absorbent materials to a height of at least 79 inches (2 meters) from the floor where they are likely to be wet or splashed. Meanwhile, according to WHO (2012), the interior walls must be finished with a wall finish that the health authority specifies or painted in light colors.

Ceilings. In addition to serving as an interior finishing, ceilings serve a variety of other purposes, such as acoustic treatment, thermal insulation, shrinking the size of rooms, and hiding structural components, unevenness, or installations to cover up ceiling abnormalities (Ching & Binggeli, 2018). Hence, every ceiling or the entire underside of the roof, according to the Code on Sanitation of the Philippines, if no ceiling is provided, must be dust-proof and washable. Rooms where food is prepared, packaged, or where utensils or hands are washed must have smooth, nonabsorbent ceilings and light-colored roof undersurfaces (Price, 2014).

Moreover, the overall lighting requirements must allow for efficient cleaning and inspection, and they must be strong enough to serve the intended purpose of each room or location. A minimum illumination intensity of 20 foot candles must be present in areas where food is prepared, packed, or handled, as well as areas where utensils or hands are washed Stadelman, et al., (2017). A minimum illumination intensity of 5 foot candles must be present in areas where food is consumed. Measurements of illumination intensity must be taken 30 inches (76.20 cm) above the ground Ghate, et al., (2017). All lighting must be evenly distributed and reasonably free from glare in order to prevent shadows. The illumination at other locations or work surfaces must meet any requirements set forth by the health authorities (Park & Lee, 2021).

Furthermore, the premises must have proper ventilation. Ventilation shall be provided which shall be effective and suitable to maintain comfortable condition. The ventilation shall be adequate to prevent the air from becoming excessively heated, prevent condensation and the formation of excess moisture on walls, ceilings and for the removal of objectionable odours, fumes, and impurities. In the absence of effective natural ventilation, mechanical ventilation with airflow from a clean area, and discharging in such a manner as not to create a nuisance, shall be provided (Omer, 2013). Canopies, air ducts, fans or other appliances shall be provided as required by the health authority in particular circumstances Latha, et al., (2015). Hence, effective provision shall be made for securing and maintaining a reasonable temperature.

Maintenance of the Premises. There shall be an established and documented procedure for maintenance, cleaning and sanitation of establishment and equipment in place. Buildings, fixtures and other facilities of the establishment shall be kept in good repair and shall be regularly cleaned and maintained in a sanitary condition. Equipment shall be kept in an appropriate state of repair and condition to function as intended; facilitate cleaning and sanitation procedures; and prevent contamination. Cleaning should remove food residues and dirt, following a standard method appropriate with the nature of the food business, which includes, but not limited to, the use of detergents, alkalis or acids, heat, scrubbing, turbulent flow, vacuum or other established means of effective cleaning. Disinfection may be necessary after cleaning. Detergents, sanitizers and other chemicals shall be safe and effective for their intended use. Established procedure for safe use and handling shall be followed.

Regular Checks. Establishing a routine for inspecting all areas of the premises, especially those where food is handled, as well as the trucks and containers used to convey food, is required for food establishments. External and interior aspects of the property, such as the fencing, yards, stores, loading and unloading zones, pens for holding animals, roofs, roof spaces, guttering, damp courses, drain pipes, drains, ventilation systems, plumbing, and light fixtures, should all be inspected. Additionally, in addition to checking food-contact surfaces and food containers, you should also inspect the floors, walls, ceilings, doors, windows, and screens. In the event of exterior damage, dampness may enter the structure and cause the formation of mold on interior surfaces.

Conveyors, cutting edges, control systems, processing machinery, cooking, chilling, and freezing machinery, metal detectors, dolavs, shackles, filters, parts, bearings, and lubrication points should all be inspected. It can be useful to discover components that require routine examination or adjusting by consulting manufacturer's maintenance manuals. The possibility that wear or damage may be discovered will determine the frequency of maintenance examinations. For instance, coated concrete floors in storerooms are significantly less likely to be

damaged than tiled floors in high traffic areas. Pay close attention to areas where food is handled. Specialized equipment, especially that that has temperature controls (such as chillers, freezers, or equipment for heat treatment), is likely to require routine maintenance by qualified engineers.

Space and access. There shall be sufficient floor space to enable every person working thereon to carry out his duties efficiently and to permit easy access for cleaning. Working spaces, aisles or passageways and areas to which customers have access shall be unobstructed and sufficient to permit movement of employees and customers without contamination of food by clothing or personal contact (Spellman & Bieber, 2012). There shall be provided adequate and suitable lockers or other facilities for the orderly storage of clothing and personal belongings of employees or persons engaged or employed in the premises. Such facilities shall be so situated and arranged so that there is no contamination of food by contact with clothing, and where the number of persons engaged or employed is four or more of either sex, there shall be provided separate changing rooms for each sex.

Toilet Provisions. Every building must be planned and built so that everyone who uses it, including visitors, has access to sanitary facilities that are convenient to use and pose no risk to the occupants' or visitors' health or safety (Carpman & Grant, 2016). The disabled are included in this. Owners of eating establishments are required by equality law to consider in advance the needs of patrons who may have a variety of impairments, such as visual, hearing, mobility, or learning disabilities (Randle & Dolnicar, 2019). The establishments must remove obstacles by making reasonable adjustments. This applies to the availability of restrooms (Loi & Kong, 2017).

With this, sanitary facilities should not be neglected while designing a building because doing so could lead to facilities that are inconveniently located or that are too small to be useful Tsinda et al., (2013). Small lobby spaces and the use of white finishes, sanitary fixtures, and fittings to suggest cleanliness are common problems, which make it difficult for someone with vision loss to utilize the facilities Thy et al., (2011). While advice is provided for a range of building types, some may be difficult to classify. In these situations, designers must examine specific provisions with client and user groups and take into account the advice provided under this standard to come up with a workable solution (Siu & Xiao, 2016).

Adequate and Clean Toilet Facilities. For both men and women to use the restrooms and for individuals with disabilities, including those who work in the establishments and those who are customers who must be given decent services, the restrooms must be suitable and clean Bartram et al., (2013). The facilities must also be offered in the appropriate places or locations Burra et al., (2013). Additionally, the restrooms should be open to both customers and staff, and there needs to be a clean, sufficient area for hand washing that is close to the restrooms (Braverman, 2012).

Additionally, it's not a good idea to open the restrooms right next to where food is being cooked, stored, and served. The door must be tightly fitting, self-closing, and opening outward where such a toilet is present Tang et al., (2020). Also, toilet rooms must be totally enclosed as well as adequately lit and ventilated. In addition to this, the number of restrooms, urinals, and wash basins must be provided in accordance with the standards for food safety and hygienic conditions Cardone et al., (2018). Besides that, the business must be able to obtain the health authority's approval of the plans for the toilet and each individual sewage disposal system, sub-surface absorption system, or other treatment device as advised by the sanitary engineer Campbell et al., (2012).

Hand washing Facilities. One of the first lines of defense for food safety in the food business is hand washing. In addition to posing a health risk to consumers, poor personal hygiene can result in exorbitant recall costs and damage one's reputation. However, it is not solely the duty of individual employees to guarantee that correct hand washing guidelines are followed. Managers need to promote a culture of food safety where washing up while waiting in line is encouraged. Additionally, facilities must have enough hand washing stations. Both knowing when to wash their hands and how to do it effectively are crucial for employees. Staff members can be instructed about hand washing and reminded to do so via bright signage placed throughout the facility.

Permanent hand washing stations ought to be placed close to work areas. They must have access to a source of warm, clean water, thus the station needs to be regularly cleaned and big enough for hand washing. The station should be set up specifically for washing hands, arms, and faces and contain a supply of soap, single-use towels, or air dryers. Utilizing automated sinks, soap dispensers, and towel dispensers can promote cleanliness by making the setup hands-free.

Wash-hand Basins. Wash-hand basins shall be installed in convenient places and as near as practicable to where the person for whose use they are provided are working while handling food for sale or in such locations as may be otherwise prescribed in any particular case (Bartolata, 2019). Meanwhile, in the decree, if required in writing by the local health authority an additional wash-hand basin shall be installed as near as practicable to the toilet facilities. Provided, that wash hand basins specified in this Code need not be installed in premises where only food in sealed containers is sold and Provided, further, that wash hand basins specified in this regulation shall be installed under specifications of the National Plumbing Code of the Philippines.

Wash-hand Basin Maintenance. An adequate supply of soap, clean towels, roller towels presenting a clean surface to each user from a continuous roller towel dispenser or other hand drying services approved by health authorities. The wash-hand basin and all hand washing facilities shall, at all times, be maintained in good repair and a clean condition (Wada & Oloruntuba, 2021). All wash-hand basins in the food establishment shall, at all times, while the premises are being used, be supplied with hot and cold or tempered running water at a minimum temperature of 100°F (37.8°C) (Tabi & Adinyira, 2018).

Water Supply. If there has been any damage or disruption to the water supply, public water sources will publish alerts and/or advisories regarding the safety of the water supply. You can contact the water authority with any concerns you may have about the security of a public water supply. A well should be examined before usage if it has been damaged by flooding or another incident. Numerous toxins found in flood waters can compromise water quality. Moreover, an establishment cannot stay open if there is no water, inadequate water pressure, or insufficient water capacity. The permit will be withheld until water service can be restored if businesses don't freely close. Depending on the menu, size, and complexity of the operation, a food facility will require a different amount of water and pressure to run safely.

In a food service operation, a sufficient amount of potable water is required for hand washing, food preparation, equipment cleaning and sanitation, and other food service tasks. Water supply issues, including those involving ice, are particularly crucial since water can directly contaminate food or surfaces that come into contact with it.

Water Quality. To ensure that foods are not polluted, the food industry must have a sufficient quantity of drinking water (also known as potable water) available for use in food processing. Water that is fit for human consumption, such as drinking, cooking, and food preparation, is defined as having no bacteria or other impurities that could be harmful to the general public's health.

Whether coming from a public or a private water supply system, the water supply must be sufficient and fit for human use. The Philippine National Standards for Drinking Water must be followed while choosing a water source. According to the local sanitary engineer's recommendation, all water sources must obtain a Certificate of Potability of Drinking Water issued by the local health officer. A daily minimum of forty (40) liters per person must be kept. Additionally, hot and cold running water with sufficient pressure must be available in all locations where food is produced, processed, or handled, as well as in places where food equipment and utensils are washed. Furthermore, drinking water must be handled, transported, and dispensed in a sanitary way if it is not provided by a piped water supply system to the food facility. It may also be held in a separate tank, reservoir, or container that has been approved by the local health inspector.

Water Treatment. Processes for treating water eliminate germs and pollutants that could otherwise be hazardous to human health or unsightly. Depending on the water source, different treatment methods are used. However, in order to bind dirt and create weighty particles that sink to the bottom of a water storage tank, an absorbent substance is often added to the water. After that, the water is filtered to get rid of even smaller impurities. In order to eliminate any leftover germs, a little amount of disinfectant (such as chlorine) may be applied. This concentration is acceptable for human consumption.

Private water sources used by the food sector must be provided and treated by the particular food company that uses the supply. Private water supplies typically need to be treated and continually checked after treatment (such as through laboratory testing) to make sure they are safe for consumption and may be utilized to produce food. As such, potable water in containers and bottles must be handled, stored, and shielded from contamination. According to Department of Health Administrative Order No. 18-A, s. 1993, the bottled drinking water must come from an authorized supplier and dispensed from the initial container that the supplier had filled. It is advantageous to provide consumers already-filled glasses of bottled water. Ice must also be handled, transported, stored, and distributed in a way that prevents contamination. It must not be left unprotected in the ground or on any dirty surfaces during deliveries. Ice from an authorized ice maker dispensing equipment must be delivered in precise amounts. It is required to provide and operate appropriate ice storage and dispensing equipment.

Solid and Liquid Waste Management. Only immediate use of refuse cans is permitted in locations where food is prepared and refuse cans should be stored both full and empty in a dedicated area away from food handling activities (Gunders & Bloom, 2017). The containers must be made and kept in a way that makes them pest- and odor-proof and simple to maintain (Chandrappa & Das, 2012). Meanwhile, except when actually being used in locations where food is handled, trash cans must always be securely closed. As long as they are made of impermeable, easily-cleaned materials and have tight-fitting covers, holding bins may also be employed Gui, et al., (2016). When using trash cans, a place distinct from the food-handling spaces and close to the trash can storage space must be made available for cleaning the trash cans (Vaughn, 2013). Meanwhile, scrubbing brushes, cleaning

agents, steam or hot water under pressure, and a hose with an adjustable nozzle must all be present in this area (Stuart, 2013).

Solid Waste Management. Solid wastes and inedible materials shall be placed in designated area until these are collected or removed from the processing plant (Mato & Kasseng, 2014). These facilities shall be designed to prevent access by pests and possible contamination of food, potable water, food-contact surfaces, processing and storage areas, and building premises (Demirbas, 2011). When applicable, a designated circuit for gas line shall be provided in a manner that prevents contamination of food, food contact surfaces, processing and storage areas Ludwig, et al., (2012). Effluent and waste disposal facility shall be provided and maintained in good working condition according to applicable regulation of the Department of Environment and Natural Resources Massoud, et al., (2013). All effluent lines (including sewer systems) shall be large enough to carry peak loads and shall be so constructed as to avoid contamination of potable water supplies and areas where food is exposed or stored (Judd, 2012).

Liquid Waste Management. Liquid waste management can be implemented through a building, pipe, valve, pump, meter, or other accessory used to transport sewage via the sewer reticulation system and treat it at a sewage treatment plant under the Council's supervision and that the Council may utilize in conjunction with sewage disposal Rao, et al., (2013). According to Ngoc, et al. (2013), floors and drainage canals shall allow adequate draining, with no stagnant water. When waste disposal systems and facilities is necessary for operation, it shall be in conformance with relevant Department of Environment and Natural Resources (DENR) regulations, designed and constructed in an appropriate manner that does not constitute a source of contamination of food or potable water supply. Taps that are non-hand operated are more appropriate. Also, the facilities shall be furnished with properly trapped wastewater pipes leading to drains (WHO, 2017).

Wholesomeness of Food. Even when the food may not be easily marketable owing to appearance, age, freshness, grade, surplus, or other conditions, it must nonetheless meet all quality and labeling criteria set by federal, state, and municipal laws or regulations (Haley, 2013). In other words, the food is suitable for human consumption in terms of sanitation, which is also essential for survival. Healthy eating diet choices can significantly affect general health, including levels of obesity and illnesses that are associated with it (Ferrero, 2018). So, in order to prevent any hazards, the food must adhere to all sanitary standards (Smith, 2017).

As a result, food servicing in food establishments must Provide effective, easily washable counter protective devices, sneeze and cough guards, cabinets, display cases, show cases, containers, or other similar types of protective equipment wherever unwrapped food is placed on display in all types of food service operations, including buffets and cafeterias (Gunders & Bloom, 2017). Self-service openings in counter guards must be constructed and placed in such a way as to shield food from customer hand touch Zandonadi et al., (2021). It is strictly forbidden to display food in fast food restaurants, karenderiyas, and other similar establishments in an open manner, whether or not the food will be reheated or cooked Todd et al., (2012). Moreover, food that has been left over or unsold and may have been contaminated must not be sold, served, or utilized again for human consumption and an authorized bulk dispenser must dispense juice, slush-ice, and other bulk food beverages (Dwumfour-Asare & Agyampong, 2014).

Furthermore, food handlers should avoid touching food or beverages with their hands; never use their fingers to serve butter, ice, or other similar foods and sugar must be served in sealed dispensers or containers, or in single-use packaging Ehuwa et al., (2021). In addition to this, It is forbidden to handle the surfaces of containers and utensils that come into contact with food or drink, including glasses and dinnerware. In line with this, disposable plates, cups, spoons, and other single-use utensils must be purchased in hygienic cartons and kept in a clean, dry location until they are needed (Turner, 2019). When handling or removing these items from the box, care must be taken to avoid touching any surface that will come into contact with food or drink (Dancer, 2011). Clean spaces allocated just for them must be used to store clean clothing, napkins, spoons, towels, and other cloth items. Soiled linens, such as towels, aprons, and outerwear, must be kept in a closed, clearly designated bin or locker Ellis, et al., (2013).

Infrequently used spoons, spatulas, dippers, and scoops used to serve frozen desserts must be kept in water that is running or kept at 77°C (170°F) and frequently changed, or they can be cleaned and put away in a dry location after each use Hormann et al., (2014). Bottles that maintain a constant temperature and other containers used for potable water and other beverages must be kept clean and treated with an efficient bactericidal solution both before and after use Lehto et al., (2011).

Dry Storage of Non-perishable Food. Storage options include designated areas, lockers, cabinets, racks, shelves, and C4 Fruits and Vegetables 7-10°C (44-50°F) containers. Additionally, all rooms, lockers, and cabinets must be built from materials of the same caliber as those employed in food preparation and service activities. Metal or a comparable material must be used to construct containers, and tight coverings must be used. Except for dry

items intended for immediate consumption where the recommended temperature range for dry storage is not greater than 1 or 2°F, as the case may be, is 10- 15°C (30-60°F).

To avoid overstocking and to allow for proper ventilation and cleaning, there must be enough shelving available. In the meanwhile, food storage spaces must be pest- and insect-free. Food must be stored at a minimum of 20 cm and must be kept separate from food items, wet and dry. (8 in.) above the ground to make cleaning the storage space easier.

Refrigerated Storage of Perishable Food. Except during preparation or when held for immediate serving after preparation, perishable food must be maintained at or below 7°C (45°F). When such items are to be stored for extended periods, a temperature of 4°C (40°F) is advised. Fruits and vegetables must also be kept in cool spaces. Frozen foods should not be stored at a temperature higher than -12°C (10°F), meat and fish should be stored at 0-3°C (32-38°F), milk and milk products should be stored at 5-7°C (40-45°F), and fruits and vegetables should be stored at 7-10°C (44-50°F).

All refrigerators and refrigerating spaces must be kept odor-free, spotless, and in good working order. Thermometers with scale divisions of no more than 1°C or 2°F, as applicable, must be made available to them. To avoid overstocking and to allow for proper ventilation and cleaning, there must be enough shelving available.

Protection of Food. All food must come from vendors that the local health department has vetted. The following standards are applicable in this regard: All meats must come from legally regulated slaughterhouses that have been examined and approved by the regulatory authority or the veterinarian. Meat products must be processed in accordance with current law and in a way that has been approved. Additionally, foods such as fish, shrimp, prawns, shellfish, seaweed, brackish water, surface water, and food from aquaculture farms or ponds must not come from sources that have been tainted by sewage, chemicals, radioactive waste, or other harmful materials. Meanwhile, vegetables and fruits must come from reliable sources where the soil has not been contaminated by toxic chemicals, sewage, or night soil.

All foods and food ingredients must be carried in hygienic facilities that have been reviewed and approved by the local health authority. All food that is being transported must be in covered containers, wrapped, or packed to prevent contamination.

Food Handlers. Moreover, all employees or food handlers who are directly engaged in the food handling shall be trained in the particular operations they perform. To determine the level of training needed by personnel Shinbaum, et al., (2016). The following factors may be considered: nature of the, particularly the ability to sustain Growth of pathogenic or spoilage microorganisms; manner in which the food is handled and Packed, including the probability of Contamination; Extent and nature of processing or further preparation before final consumption; conditions under which the food will be stored; and expected length of time before consumption Mitchell, et al., (2014). Furthermore, food handlers, according to (Patnod, 2012), maintenance and other concerned personnel shall be trained on good food handling practices, hazard analysis critical control points, and other Food Safety related training conducted by qualified individuals.

However, the training in good food handling practices shall be in accordance with written programs approved by the production and quality control managers/heads Baş, et al., (2013). Also, records of personnel training shall be maintained to enable periodic assessment of the effectiveness of training and instruction programs; and determine further training needs Costello, et al., (2014). Refresher training shall be conducted on a continuing basis to ensure awareness of all procedures necessary to maintain safety and suitability of food (Mortimore & Wallace, 2013).

Food Handling. Food handlers must take out all potential contaminating items and substances from the area where exposed utensils and equipment are being cleaned, including but not limited to jewelry, watches, pins, nail polish, lotion, and clothing. When cleaning equipment and utensils, handlers must not sneeze, eat, chew, or use tobacco or other nicotine (Manning & Soon, 2016). Also, equipment maintenance personnel, well as shall practice proper personal hygiene in where food is exposed or effective control measures shall taken to food-contact surfaces, or food-packaging materials with micro-organisms and other foreign substances Mathews et al., (2021).

Facilities that are necessary for product, must have an intended and designated be potable non-potable water supply. Potable temperature with adequate facilities for its storage, where necessary, and distribution. There shall be adequate protection against any food contamination Demirci et al., (2016). However, non-potable water shall not be used food refrigeration, and other purposes not direct food, room/s shall strategically prevent food, processing area. Toilets designed and constructed ensure waste matter, and hand-washing sufficient supply potable water, hand preparation and suitable King, et al., (2017).

Vermin Control. The proprietor of a food establishment should give top importance to food safety and cleanliness. The last thing they want is for one of their patrons to become ill or for someone to see mice sharing food with them. When it comes to customer service, there are no quick cuts (Sani & Siow, 2014). It must be guaranteed

that customers who have eaten there feel secure returning Da Cunha et al., (2014). It is possible to keep pets, and pests like ants, cockroaches, and mice away while maintaining food safety by stepping up pest management efforts, thoroughly cleaning the facility, and providing workers with additional training on the high standards of food handling Powell et al., (2012).

Many customers will experience extreme horror and disgust when they see mice and rats. They are renowned for dispersing illnesses including *Listeria*, and *Salmonella*. *E. Coli* is one of many examples (Marx, 2019). They not only use their teeth to chew through food packaging, electrical wiring, and plumbing, but they also contaminate restaurants with their urine and feces (Frye, 2021). Customers will also have a very unpleasant reaction to cockroaches. Many pathogens, including those that cause food poisoning, can be spread by them (Gale, 2016). Due to their ability to survive for weeks without food or water, cockroaches are a particular pain for restaurant owners. They can stay in the premises indefinitely once they have arrived (Brooks & Jackson, 2013).

Controlling Pets, pests, insects, birds, vermin, and rodents. Animals (including pets) shall not be allowed in any area of a food establishment. Hence, measures shall be taken to exclude pests and their breeding places from the processing areas and to protect food against the contamination by animals, birds, vermin, rodents and insects (Costa, 2013). Buildings should be kept in good repair and condition to prevent pest access (Marshall & Levy, 2011). Holes, drains and other places where pests are likely to gain access should be kept sealed. When appropriate, wire screens may be installed on windows, doors and ventilators to prevent entry of pests (Reganold & Wachter, 2016).

Cleanliness and Tidiness. The most crucial elements in the restaurant industry are cleanliness and tidiness. No matter how delicious the food may be, how inventive the dishes may be, or how great the service may be, if a business is not clean and neat, customers won't want to swarm there. Consequently, there are a number of cleaning supplies that are necessary in order to maintain a tidy and healthy working environment in a food establishment for them to cope up with the requirements set by the local health office for food safety and sanitation. Owners of restaurants must have all the equipment that a business would require in order to keep their establishments tidy and clean.

Maintenance of Clean Condition. Cleanliness in a food establishment is a required to meet the basic requirements for an establishment to be able to operate, including, offering or selling food and services. it is a necessary the food establishment is in a maintained clean condition in every rooms, including corners, yards, passageways, and the full premises. Additionally, since food, equipment, and utensils are kept in cabinets and compartments, they must be in good condition and thoroughly cleaned. Besides that, since food and raw materials, especially perishable ones, are stored in refrigerators, this is where the majority of contamination occurs. All appliances, including refrigerators, should be cleaned routinely.

Maintenance of Tidy Condition. Tidiness is as crucial and necessary to meet the requirements for an establishment to be able to operate, including offering or selling food and services, just like cleanliness in a food facility. It is essential that the restaurant is kept clean and devoid of accumulated boxes, tins, and other items that could serve as a haven for rodents or otherwise be annoying and unsightly. Materials that could be considered trash and could hinder a restaurant's ability to serve customers, restrict access for staff, and encourage the appearance of vermin.

Housekeeping and Management. This item states that all rooms, public spaces, and surrounds must be kept clean, regularly maintained, and aesthetically pleasing by housekeeping and management. To ensure that the housekeeping department and housekeepers operate effectively, housekeeping and management comprises organizing, directing, and overseeing them. It can be easier to provide services if you have a basic awareness of them.

Conformity of Premises. In order to meet the requirements for food safety and sanitation in this item, the premises' building, drainage, and sanitation standards must be met. This refers to maintaining the property and removing waste at frequent, sufficient intervals that are liter-free. In addition, sufficient staff and customer oversight is necessary to guard against violations of hygienic standards. Dogs, cats, and other domesticated animals should not be allowed inside the building or on the premises. In addition, every day, hot water and soap are used to scrub off any furniture or equipment that come into close touch with easily perishable foods or noise. Additionally, all cabinets and shelves where food or appliances are kept must be maintained tidy and clear of trash. Additionally, clean storage should be used for cleaned linens and/or clothing.

Personal Cleanliness. Keeping food clean is only one aspect of food sanitation. It includes all procedures used to safeguard food against contamination, poisons, foreign objects, harmful bacteria, and other contaminants. It also includes preventing bacteria from growing to a point where they could make consumers ill. Finally, it includes thoroughly cooking or processing food to kill any harmful bacteria present.

As a result, food establishments are required to introduce these principles through the food handlers' good personal hygiene habits. By doing this, food contamination can be prevented in addition to maintaining food

sanitation. So, this might be less of a headache since there will be no any further steps required to get rid of any dangerous bacteria, pollutants, or toxins that come from foreign items or the person handling the food, since there is nothing to get rid of in the first place. Unless, the issue will be moved to the necessary measure needed in preparing food such as washing, cleaning, and sterilization, since these are normal.

Good Personal Hygiene Practices. In almost any circumstance, good personal hygiene is essential, but food handlers in a culinary setting require it even more. A key component of food safety is proper food handling, which involves adequate personal hygiene. These behaviors have a big impact on customers. Instead of food handlers who practice poor hygiene habits, the people whose food is being handled prefer to see food handlers who appear polished and professional. Personal hygiene, however, goes beyond outward appearances to protect against food poisoning. Everyone carries some bacteria on them. Without washing your hands first, touching your food after touching your eyes, mouth, nose, hair, or clothing encourages the spread of that bacteria.

As such, all personnel working in direct contact with food, food contact surfaces, and food-packaging materials shall conform to hygienic practices while on duty to the extent necessary to maintain the safety and quality of food (Watt, 2015). Where necessary, wear outer garments, gloves, mask, hair restraint, including working shoes in a manner that protects against the contamination of food, food-contact surfaces, or food-packaging. Wash hands thoroughly (and sanitizing if necessary to protect against contamination with undesirable microorganisms) in an adequate hand-washing facility before starting work, after cache absence from the work station, and at any other time when the hands may have become soiled or contaminated (Cairncross & Feachem, 2018).

Condition of Appliance/s and Utensils. The equipment and utensils must be designed, produced, and put in place in a way that makes them easy to clean and safe for human use (Ndu & Asiegbu, 2021). Use of lead-soldered containers, cadmium-lined piping, and fixtures is prohibited. Surfaces that come into contact with food or beverages require construction materials that are impermeable, corrosion-resistant, non-toxic, easy to clean, durable, and chip-resistant. Sliding cabinet doors must be removable and easy to clean (Costa, 2013). The allocation of runners at the ends is necessary to enable for the removal of dust and debris. The bottom shelves of open-based fixtures shall be removable for examination, maintenance, and cleaning (Barlan-Espino, 2017).

Control, Design and Maintenance. Food establishments' equipment and utensils maintenance will become more crucial—and subject to more scrutiny—as FDA keeps prevention as the driving principle for food safety rather than reaction and monitoring (Schoenfuss & Lillemo, 2014). Reactive maintenance will soon be replaced as the norm in the CGMP environment by preventive maintenance (PM) and predictive maintenance (PdM) (Arduser & Brown, 2013). Moreover, the equipment can be a bigger potential source of physical and microbiological contamination if it is not kept in good repair and condition Roth, et al., (2013). Debris from worn-out or broken parts can pollute the manufacturing process or even get into the finished product (DeWAAL & Plunkett, 2013).

Regarding this, as according to Code on Sanitation in the Philippines cited by (Medina, 2014), utensils and equipment must be created, produced, and installed in a way that makes cleaning simple and prevents health risks. Additionally, cadmium-lined pipework and fittings as well as lead-soldered containers are not permitted (Barlan-Espino, 2017). Food- and beverage-contact surfaces must be made of materials that are impermeable, corrosion-resistant, non-toxic, easy to clean, long-lasting, and chip-resistant. Additionally, a sufficient amount of tools and utensils must be offered in proportion to the anticipated customers (Brikke & WHO, 2012).

Sanitary Condition of Appliance/s and Utensils. Keeping food clean as asserted by (Beuchat, 2013), is only one aspect of food sanitation. It includes all procedures used to safeguard food against contamination, poisons, foreign objects, harmful bacteria, and other contaminants. It also includes preventing bacteria from growing to a point where they could make consumers ill. Finally, it includes thoroughly cooking or processing food to kill any harmful bacteria present (Bader & Jagtap, 2020).

Food Service Sanitation. Absolute cleanliness is the main premise of food-service sanitation. It starts with good personal hygiene, safe handling of food while being prepared, and clean kitchen and dining areas as well as utensils, equipment, appliances, and storage spaces Fleetwood, et al., (2019). Control of the microbiological quality of food must concentrate on how it is prepared, how it is handled, how it is stored, and how it is distributed. Thus, food quality is influenced by environmental factors Fatima, et al., (2011).

Equipment and Utensils Sanitation. Equipment and utensils with food contact surfaces that have been cleaned and sterilized must be handled carefully to prevent contamination. Only the handles of clean spoons, knives, and forks should be picked up and used (Don-Derry & Addo, 2016). Additionally, clean cups, glasses, and bowls must be designed such that fingers and thumbs cannot touch the interior or surfaces that come into contact with the lips. All tools and equipment must be carefully stored in cabinets made of clean materials or otherwise shielded from any potential sources of contamination Pulido, et al., (2021).

Disease Control. The majority of diseases are, to some extent, avoidable, with the main exceptions being idiopathic conditions like inherited metabolic abnormalities (Barker & Williams-Gray, 2016). Eliminating or drastically lowering the environmental elements at fault is the only surefire way to prevent diseases brought on by environmental exposures (Engel, 2013). Because a substantial portion of chemicals, other substances, and materials come from human activities, prevention should be as easy as applying accepted industrial hygiene standards. However, in actuality, this is frequently challenging to accomplish Van der Spiegel et al., (2013).

As for the disease control in food establishments, it is about the responsibility of to control diseases that may affect the quality of food, the services, and the establishment as a whole Doyle et al., (2015). This also includes procedures on how to avoid any possibilities of the disease spread and possible food contamination (Todd, 2020).

Food Handlers. There shall be established and documented procedures for disease control, personnel hygiene such as but not limited to the following: Any person known, appears, or suspected to have an illness or symptoms like jaundice, diarrhea, vomiting, fever, sore throat with fever, discharges from the eyes, ears nose, and visibly infected skin lesions (boils, cuts, etc.) shall be reported to the supervisor and excluded from any food handling/contact operations (Peteresn and Ogawa, 2012).

Health Certificate. Without a health certificate granted by the local health department, no one may work in any food establishments. Meanwhile, food handlers must always wear hygienic work attire Sun, et al., (2012). The cook must also don the required headgear, as well as female employee caps or hairnets. Maintain proper personal hygiene. Before starting work or right after using the restroom, they should thoroughly wash their hands with soap and water and dry them with a clean, disposable towel or other appropriate hand-drying equipment (Sani & Siow, 2014).

Miscellaneous. The use of utensils during packing, preparation, and serving are just a few examples of how the food establishment adheres to the standards of food safety and sanitation in this section. Additionally, it's forbidden to eat ham, cheese, cooked meat or fish, baker's small products, cakes, pastries, sandwiches, or other comparable items with your fingers. Customers aren't allowed to touch the food that's on display. Additionally, no unclean items may be bagged, including bags, wrappers, stickers, labels, or other articles. Protection of food from rain, dust, vermin, and other forms of contamination during manufacture, preparation, storage, packing, or delivery for sale. Consequently, this might be accomplished by exhibiting a sanitary permit.

Sanitary Permit. No person or organization may run a food establishment for the general public without first obtaining a permit from the local health authority to guarantee that the necessary sanitary requirements are met. To guarantee that food businesses are in conformity with food safety and sanitation regulations, each sanitary permit must be posted in a prominent location of the institution. Also, in this section, it is highlighted that sanitary permit and sanitation standard rating sticker is attached to/displayed at the door or in a conspicuous area of the establishment. Additionally, Inspection Record, In-House Inspection, and Other Necessary Documents should Always Be Available During Inspection.

Hence, in this paper, this decree will be the basis that Karenderyas must match their food safety and sanitation practices in line with the aforementioned inclusions. This will become the foundation of this paper in answering the research questions and be able to achieve this paper's objectives..

2. REVIEW OF RELATED LITERATURE

This chapter will discuss some of the reviews of related literature regarding on the topic (Food safety and sanitation practices among karenderyas).The discussion also includes topics from various reliable sources such as books, articles, journals and other researchers nationwide.

2.1 Factors Affecting Food Safety and Sanitation Practices

Foods are the basic building blocks of living things, yet they may pose a threat and become harmful to human health in some situations (Yiğit, V. & Duran, T. 2014). Many people throughout the world become ill because of the food they eat. These diseases associated with food consumption are referred to as foodborne diseases, and they may result from dangerous microorganism (WHO, 2013). Foods can become harmful to human health or even fatal when combined with bacteria, mold, viruses, parasites and chemical toxins (Yiğit, V. & Duran, T. 2016). Therefore, it is absolutely necessary that consumers be provided with a safe food supply. The factors involved in the potential threat caused by foods are inappropriate agricultural practices, poor hygiene at any stage of the food chain, lack of preventive controls during processing and preparation of the food, incorrect use of the chemical materials, contaminated raw materials, food and water and inappropriate storage (WHO, 2018).

Construction of Premises. The construction of karenderyas is crucial in ensuring food safety and sanitation. The design, layout, and construction materials used can impact the hygiene practices and level of contamination in the establishment. For instance, inadequate ventilation, lighting, and improper construction materials were identified as major contributing factors to food contamination in food establishments Iwuagwu et al., (2019), the study found that a significant number of food establishments lacked proper ventilation, which resulted in poor air quality and increased the risk of microbial contamination. The study also found that poor lighting in food establishments can result in poor visibility, making it difficult to identify and clean areas that require attention.

The layout and design of food establishments, including karenderyas, can also impact food safety, as found by Al-Jasass et al., (2016). The study identified that good design facilitates hygiene practices and reduces the risk of contamination. For instance, the study found that the installation of hand washing stations in the front of the kitchen area was an effective strategy for encouraging food handlers to practice good hand hygiene. The study also found that having a designated area for the disposal of waste was associated with reduced levels of microbial contamination in food establishments. Similarly, the layout of food establishments was found to be associated with microbial contamination, with establishments that had an open kitchen design having higher levels of contamination than those with a closed kitchen design, according to a study by Al-Kharousi et al., (2017).

The study found that food establishments with an open kitchen design had higher levels of microbial contamination due to the increased exposure of food to air-borne contaminants. The study suggested that the installation of proper air filtration systems and the use of physical barriers to separate the kitchen area from the dining area could reduce the level of contamination in food establishments. Furthermore, the construction of premises should also consider the use of appropriate materials that are easy to clean and maintain. As highlighted by Abdul-Razak et al., (2020), found that food establishments that used stainless steel as the primary material for kitchen utensils and surfaces had significantly lower levels of microbial contamination compared to those that used plastic or wood. The study suggests that the use of stainless steel in food establishments can contribute to reducing the risk of foodborne illness. In conclusion, the construction of karenderyas plays a vital role in ensuring food safety and sanitation. Proper ventilation, lighting, layout, and construction materials can significantly impact the level of contamination in food establishments. The use of appropriate materials that are easy to clean and maintain can also contribute to reducing the risk of foodborne illness.

Maintenance of Premises. The maintenance of karenderyas is crucial for ensuring food safety and sanitation. Poor maintenance practices, including inadequate cleaning and disinfection, can lead to the growth of pathogenic bacteria in food establishments, as found by Salameh et al., (2019), the study identified that food establishments with poor cleaning practices had higher levels of bacterial contamination compared to those with good cleaning practices. The study suggests that the implementation of proper cleaning and disinfection practices can significantly reduce the risk of foodborne illness. A study by Ismail et al., (2018), found that poor hygiene practices, including inadequate cleaning and disinfection of kitchen utensils and surfaces, were major factors in food contamination. The study found that food establishments with poor hygiene practices had higher levels of bacterial contamination in their food products. The study suggests that the implementation of proper hygiene practices, including regular cleaning and disinfection of kitchen utensils and surfaces, can contribute to reducing the risk of foodborne illness.

Moreover, the improper storage of food can also lead to the growth of mold and fungi, which can produce toxins that pose a health risk to consumers, according to a study by Shafiei et al., (2020). The study found that food establishments with poor storage practices had higher levels of mold and fungi contamination in their food products. The study suggests that the implementation of proper food storage practices, including temperature control and the use of appropriate storage containers, can reduce the risk of fungal contamination in food products.

Furthermore, the maintenance of premises should also include regular pest control measures, as pests can act as carriers of disease-causing pathogens. A study by Karunaratne et al., (2019), found that food establishments with poor pest control practices had higher levels of bacterial contamination in their food products. The study suggests that the implementation of proper pest control measures, including regular cleaning and maintenance of the premises and the use of pest control chemicals, can significantly reduce the risk of foodborne illness. In conclusion, the maintenance of karenderyas is crucial for ensuring food safety and sanitation. Proper cleaning and disinfection practices, hygiene practices, food storage practices, and pest control measures can significantly reduce the risk of foodborne illness. The implementation of these practices can contribute to maintaining a safe and healthy food environment for consumers.

Toilet provision. Toilet provision plays a crucial role in ensuring the safety and sanitation of food establishments, including karenderyas. The availability of toilets and hand hygiene products can significantly reduce the risk of foodborne illnesses caused by poor hygiene practices. A study conducted by (Al-Otaibi, 2018), found that food establishments with toilet facilities exhibited better hygiene practices and lower levels of contamination. The

presence of toilets was also associated with an increased likelihood of employees washing their hands before food preparation and after handling money or cleaning tasks. As stated by Chou et al., (2018), found that the availability of toilet facilities and hand hygiene products was significantly associated with a reduced risk of foodborne illness.

The researchers found that establishments with better toilet facilities and hand hygiene products had lower rates of foodborne illnesses caused by pathogens such as Salmonella and Staphylococcus aureus. In another study conducted by Shrestha et al. (2020), the presence of separate toilets for staff and customers was associated with better hygiene practices in food establishments. The study found that food establishments with separate toilets had higher rates of hand washing by both customers and staff, leading to a reduction in the risk of contamination.

Additionally, a study by Hwang et al., (2019), found that the availability of clean and well-maintained toilet facilities in food establishments was positively associated with customers' perceptions of food safety and quality. The study found that customers were more likely to trust and patronize establishments with clean and hygienic toilet facilities. Furthermore, a study by Imamura et al., (2020), found that the presence of toilets and hand hygiene products in karenderyas was positively associated with employees' knowledge of food safety and hygiene practices. The study found that establishments with better toilet facilities and hand hygiene products had employees who were more knowledgeable and conscientious about food safety. The provision of toilets and hand hygiene products in karenderyas and other food establishments is critical for ensuring food safety and hygiene. The studies mentioned above demonstrate that the availability of such facilities is associated with better hygiene practices, lower rates of contamination, and increased customer trust and patronage. It is, therefore, essential for food establishments to prioritize the provision of adequate toilet facilities and hand hygiene products to maintain a safe and healthy environment for their employees and customers.

Hand washing facilities. Hand washing facilities play a crucial role in preventing the spread of pathogens in karenderyas and other food establishments. Adequate hand washing facilities and proper hand hygiene practices are necessary to ensure food safety and prevent the transmission of infectious diseases. A study by Adegbehingbe et al., (2019), found that hand washing facilities were not always available in small-scale food establishments, including karenderyas. When hand washing facilities were available, they were often inadequate and not maintained properly. The study highlighted the need for improved hand washing facilities and education to promote proper hand hygiene practices among food handlers. Similarly, a study by Ademiluyi et al., (2018), found that inadequate hand washing facilities and poor hand hygiene practices were major contributing factors to food contamination in food establishments. The study found that many food handlers did not have access to hand washing facilities or did not use them properly. The researchers recommended the provision of adequate hand washing facilities and regular training on hand hygiene practices to prevent food contamination. In another study conducted by Bong et al., (2019), the researchers found that hand hygiene compliance among food handlers in Malaysian food establishments was low. The study showed that many food handlers did not wash their hands properly or use hand sanitizers before food handling. The researchers recommended the provision of better hand washing facilities and education to improve hand hygiene compliance among food handlers. According to Park et al., (2020), found that the provision of hand washing facilities and education on hand hygiene practices significantly improved hand hygiene compliance among food handlers. The study showed that the intervention led to a significant reduction in bacterial contamination of food and a decrease in the incidence of foodborne illnesses. Similarly, a study by Arifin et al., (2021), found that the provision of hand washing facilities and education on hand hygiene practices significantly improved hand hygiene compliance among food handlers. The study found that food handlers who received the intervention had significantly fewer bacteria on their hands, indicating a reduction in the risk of food contamination. The provision of adequate hand washing facilities and education on proper hand hygiene practices is crucial for preventing the spread of pathogens in karenderyas and other food establishments. The studies mentioned above demonstrate that inadequate hand washing facilities and poor hand hygiene practices are major contributing factors to food contamination and the transmission of infectious diseases. It is, therefore, essential for food establishments to prioritize the provision of adequate hand washing facilities and regular training on hand hygiene practices to ensure food safety and prevent the spread of infectious diseases.

Water Supply. a study conducted by Lestari et al., (2020), the authors investigated the relationship between the availability and quality of water supply and sanitation standard rating display in food safety and sanitation practices among street food vendors in Indonesia. The authors found that vendors who had access to a clean and safe water supply were more likely to display their sanitation standard rating and had better overall sanitation practices. In a study conducted by Girma et al., (2017), the authors investigated the impact of water supply on food safety and sanitation practices among restaurants in Ethiopia. The authors found that restaurants that had access to a reliable and safe water supply had better food safety and sanitation practices than those that did not have access to such water supply. Similarly, in a study conducted by Bekele et al., (2019), the authors investigated the factors that influence the water supply sanitation standard rating display in food safety and sanitation practices among

restaurants in Ethiopia. The authors found that the availability and quality of water supply, the type of restaurant, and the level of education of the restaurant owner were the main factors that influence the display of the sanitation standard rating.

In a study conducted by Tahir et al., (2020), the authors investigated the relationship between the water supply sanitation standard rating display and food safety practices among restaurants in Pakistan. The authors found that restaurants that displayed their sanitation standard rating had better food safety practices, and the quality and availability of water supply were significant factors that influenced the display of the sanitation standard rating.

Finally, in a study conducted by (Odeyemi & Sridhar, 2021), the authors investigated the relationship between water supply quality and food safety practices among restaurants in Nigeria. The authors found that the quality and availability of water supply were significant factors that influenced the food safety practices of restaurants, and poor water quality was a major contributing factor to foodborne illnesses.

In a study conducted by Esguerra, et al., (2020), they found that the water supply quality significantly affects the sanitation practices of food establishments in the Philippines. The researchers also observed that the water supply sanitation standard rating display has a positive impact on the overall food safety practices of the establishments.

Another study conducted by (Ilagan & Ragragio, 2019), revealed that the implementation of proper sanitation and hygiene practices is significantly affected by the availability and quality of water supply. The researchers also emphasized the importance of water quality testing and the regular maintenance of water sources in ensuring food safety in restaurants.

According to a report by the (FAO, 2018), inadequate access to safe water supply and poor sanitation practices contribute to food contamination in the Philippines. The report emphasized the need for improved water supply and sanitation systems to ensure safe and healthy food for consumers.

A study by Martinez-Garcia, et al., (2021) showed that the water quality and sanitation practices of food establishments significantly influence consumers' trust and satisfaction in the food they consume. The researchers also highlighted the importance of the water supply sanitation standard rating display in promoting transparency and accountability in food safety practices.

In a report by (WHO, 2019), the organization emphasized the importance of ensuring access to safe water supply and sanitation facilities in food establishments to prevent the transmission of foodborne diseases. The report also highlighted the role of government agencies in enforcing regulations and standards related to water supply and sanitation in food establishments.

In conclusion, the factors affecting water supply sanitation standard rating display in food safety and sanitation practices among restaurants include the cleanliness of the facility, the quality of the food served, the frequency of health inspections, consumers' perception of safety and quality, inadequate water supply and sanitation facilities, lack of employee training and education, and poor management practices.

Solid and liquid waste management. Solid and liquid waste management is a crucial aspect of food safety and sanitation in karenderyas. In a study by (Abdulrahman, 2019), it was found that poor waste management practices in food establishments were associated with an increased risk of food contamination. Similarly, a study by (Rilak, 2021), found that inadequate waste disposal practices in food establishments contributed to the presence of flies and other vermin, which can contaminate food and spread diseases. Thus, it is essential for karenderyas in Cateel, Davao Oriental to have proper waste management practices to ensure food safety. The protection of food from contamination is crucial for ensuring food safety in karenderyas. A study by Adekunle et al., (2018), found that the lack of protection of food from flies and other vermin was a significant concern in food establishments. The study recommended the use of food covers and other protective measures to prevent food contamination. This study highlights the importance of protecting food from environmental contaminants to prevent the spread of diseases.

According to Kizito et al., (2021), stated that the lack of protection of food from dust and other environmental contaminants was a significant concern in food establishments. The study recommended the use of food covers and proper storage practices to ensure the protection of food. This study emphasizes the importance of implementing protective measures to prevent food contamination and maintain the safety of food. In another study by Rhee et al., (2018), it was found that the use of food covers and other protective measures significantly reduced the risk of contamination in food establishments. The study recommended the implementation of protective measures and regular cleaning and sanitization practices to ensure the safety of food. This study highlights the effectiveness of protective measures in preventing food contamination and maintaining the safety of food. Furthermore, a study by Semahegn et al., (2020), found that the lack of proper storage facilities and protective measures in food establishments led to the spoilage and contamination of food. The study recommended the implementation of proper storage practices and the use of protective measures to ensure the safety and quality of food. This study emphasizes the importance of proper storage practices and protective measures in maintaining the

safety and quality of food. Overall, these studies highlight the importance of implementing protective measures, such as the use of food covers and proper storage practices, to prevent food contamination and maintain the safety of food in karenderyas and other food establishments. It is essential for karenderyas in Cateel, Davao Oriental, to prioritize the protection of their food from environmental contaminants and implement these measures to prevent the spread of disease and ensure the health of their customers.

Wholesomeness of food. The wholesomeness of food refers to its overall safety and quality, which are essential indicators of food safety in karenderyas. In a study conducted by Sulieman et al., (2018), it was found that the presence of harmful microorganisms in food samples collected from food establishments was a significant concern. The study recommended regular food safety inspections and improved food handling practices to ensure the wholesomeness of food. This study highlights the need for food establishments to prioritize food safety to prevent foodborne illnesses. Similarly, a study by Binodh et al., (2020), found that improper food storage and handling practices in food establishments led to the presence of harmful bacteria and other microorganisms in food, which can cause foodborne illnesses. This study emphasizes the importance of proper food handling and storage practices to maintain the wholesomeness of food.

Furthermore, a study by Rahman et al., (2019), showed that food samples collected from street food vendors contained high levels of bacteria and other microorganisms, which can lead to foodborne illnesses. The study suggested that food vendors need to improve their food handling and storage practices and recommended regular food safety inspections to ensure the wholesomeness of food. In another study by Fakorede et al., (2021), it was found that the majority of food samples collected from street food vendors were contaminated with bacteria, including *Escherichia coli* and *Staphylococcus aureus*, which can cause foodborne illnesses. The study recommended the implementation of food safety regulations, regular food safety inspections, and food safety education for vendors to ensure the wholesomeness of food.

Overall, these studies highlight the importance of proper food handling and storage practices, as well as regular food safety inspections, to ensure the wholesomeness of food in karenderyas and other food establishments. It is crucial for karenderyas in Cateel, Davao Oriental, to prioritize food safety and implement these measures to prevent foodborne illnesses and ensure the health of their customers.

Protection of food/s. According to a study by Omemu et al., (2006), the type of packaging material used significantly affects the protection of foods in food safety and sanitation practices. The study found that foods stored in plastic containers had higher microbial counts compared to those stored in glass and stainless steel containers. Another study by Da Silva et al., (2013), showed that the level of education and training of food handlers had a significant impact on food safety and sanitation practices. The study found that food handlers with higher levels of education and training had better knowledge of food safety and sanitation practices, which resulted in better protection of foods.

A study by Aluko et al., (2015), also found that the location and physical condition of the food establishment significantly affect the protection of foods in food safety and sanitation practices. The study found that food establishments located in unsanitary environments had higher microbial counts in their foods compared to those located in clean environments. A study by Nwachukwu et al., (2018), found that the use of preservatives in food preparation significantly affects the protection of foods in food safety and sanitation practices. The study found that foods prepared with preservatives had lower microbial counts compared to those prepared without preservatives.

Lastly, a study by Azanza et al., (2020), found that the availability of hand washing facilities and the frequency of hand washing by food handlers significantly affect the protection of foods in food safety and sanitation practices. The study found that food establishments with adequate hand washing facilities and food handlers who practiced frequent hand washing had lower microbial counts in their foods compared to those with inadequate hand washing facilities and infrequent hand washing practices.

According to a study by Pinili and colleagues (2020), poor hygiene and sanitation practices of food handlers were identified as the major factors affecting food safety in karenderyas and small food establishments in the Philippines. The study revealed that a lack of knowledge and training on proper food handling and sanitation, inadequate facilities and equipment for food preparation, and limited access to clean water and sanitation facilities were the common challenges faced by these establishments.

Another study by (Villamayor & colleagues, 2020), found that inadequate storage conditions, improper handling, and lack of knowledge on food safety regulations were the main factors affecting food safety in street food vending in the Philippines. The study also identified the need for stricter implementation of food safety regulations and more extensive training and education programs for food vendors. A study by (Arriola & colleagues, 2019), investigated the factors influencing food safety practices among restaurants in Metro Manila, Philippines. The study identified lack of food safety knowledge among food handlers, inadequate food safety management systems, and

limited resources and support for food safety compliance as the main factors affecting food safety in these establishments. In a study by (De Castro & colleagues, 2018), it was found that poor hygiene and sanitation practices, inadequate storage facilities, and insufficient training and education on food safety were the common challenges faced by small-scale food establishments in the Philippines. The study recommended the need for better regulation and monitoring of food safety practices in these establishments, as well as more extensive training programs for food handlers.

Vermin Control. Is a critical component of ensuring food safety in karenderyas. A study by Adesokan et al., (2018), found that the presence of vermin, such as rats and cockroaches, in food establishments was a significant concern. The study recommended regular pest control measures to prevent vermin infestations. This study highlights the importance of implementing vermin control measures to prevent the spread of disease. Similarly, a study by Rauzi et al., (2020), found that the presence of flies and other vermin in food establishments was a significant concern. The study recommended the use of fly traps and other pest control measures to prevent vermin infestations. This study emphasizes the importance of implementing effective vermin control measures to maintain food safety. In another study by Opara et al., (2019), it was found that the presence of rodents and other vermin in food establishments was a significant concern. The study recommended the use of rat traps and other pest control measures to prevent vermin infestations. This study highlights the importance of implementing vermin control measures in preventing the spread of disease and ensuring food safety. Moreover, a study by Lee et al., (2019), found that the presence of vermin in food establishments was associated with a higher risk of foodborne illness. The study recommended the implementation of pest control measures, including the use of bait stations and the sealing of gaps and cracks, to prevent vermin infestations. This study emphasizes the need for effective vermin control measures to prevent food contamination and maintain food safety. Overall, these studies highlight the importance of implementing vermin control measures in karenderyas and other food establishments. Vermin infestations can lead to the spread of disease and the contamination of food, making it essential to prioritize vermin control to ensure the health and safety of customers. Karenderyas in Cateel, Davao Oriental, should implement regular pest control measures to prevent vermin infestations and maintain food safety.

Cleanliness and Tidiness. Cleanliness and tidiness are crucial aspects of maintaining food safety and sanitation in food establishments such as restaurants, cafeterias, and karenderyas. Several studies have emphasized the importance of cleanliness and tidiness in these settings, highlighting the significant impact they can have on the health and safety of consumers. A study conducted by Aminu et al., (2019), investigated the cleanliness and tidiness practices of food establishments. The study found that lack of cleanliness and tidiness was a significant concern in these settings. Specifically, the study noted that food handlers did not properly clean and sanitize their hands and equipment, leading to contamination of food items. The study recommended regular cleaning and sanitation practices to ensure the cleanliness and tidiness of food establishments. Similarly, a study by Aziz et al., (2021), also found that the lack of cleanliness and tidiness was a significant issue in food establishments. The study found that food handlers did not follow proper hygiene practices, such as wearing gloves and washing their hands regularly, leading to food contamination. The study recommended the implementation of strict hygiene protocols and regular monitoring to ensure the cleanliness and tidiness of food establishments. Furthermore, a study by Lee et al., (2020), found that cleanliness and tidiness played a crucial role in the perceived quality of food establishments. The study surveyed consumers and found that they were more likely to trust and patronize food establishments that maintained high levels of cleanliness and tidiness. The study recommended that food establishments prioritize cleanliness and tidiness to enhance consumer trust and loyalty. In conclusion, maintaining cleanliness and tidiness in food establishments is essential for ensuring food safety and sanitation. Several studies have emphasized the importance of implementing regular cleaning and sanitation practices, following proper hygiene protocols, and monitoring cleanliness and tidiness to minimize the risk of food contamination. Additionally, prioritizing cleanliness and tidiness can enhance consumer trust and loyalty in food establishments.

High levels of customer satisfaction from an outstanding dining experience may result in repeat business, which can enhance income, according to Gupta et al., (2017).

Personal Cleanliness. Emphasize the importance of maintaining proper hygiene habits to prevent the spread of infectious diseases. According to (Liu et al., 2018), stated that hand hygiene is an essential component of personal cleanliness and plays a crucial role in preventing the transmission of infectious diseases. In their study, Opara et al., (2020), it emphasize the need for proper oral hygiene practices to maintain good health and prevent dental problems. As a study by like Khatoon et al., (2019), it highlights the importance of personal cleanliness practices in reducing the risk of foodborne illnesses and maintaining food safety. According to (Offei & Dzomeku, 2019), poor sanitation and hygiene practices can lead to the transmission of parasitic infections, highlighting the importance of maintaining good personal hygiene. According to (Fakhrudin & Vinodkumar, 2014), emphasizes the role of proper food handling, storage, and preparation practices in maintaining food safety and preventing foodborne illnesses. In their

study on personal cleanliness, emphasize the importance of maintaining proper hygiene habits to prevent the spread of infectious diseases. Personal cleanliness highlights the role of education and awareness campaigns in promoting healthy hygiene habits among individuals and social norms on personal cleanliness practices among different communities.

Similarly, According to Liu et al., (2018), stated that hand hygiene is an essential component of personal cleanliness and plays a crucial role in preventing the transmission of infectious diseases. In their study, Opara et al., (2020), it emphasize the need for proper oral hygiene practices to maintain good health and prevent dental problems. As a study by Khatoon et al., (2019), it highlights the importance of personal cleanliness practices in reducing the risk of foodborne illnesses and maintaining food safety. According to (Abboah-Offei & Dzomeku, 2019), found that the poor sanitation and hygiene practices can lead to the transmission of parasitic infections, highlighting the importance of maintaining good personal hygiene. According to (Fakhrudin & Vinodkumar, 2014), emphasizes the role of proper food handling, storage, and preparation practices in maintaining food safety and preventing foodborne illnesses. In their study on personal cleanliness, emphasize the importance of maintaining proper hygiene habits to prevent the spread of infectious diseases. According to (Chen & Li, 2019), proper handwashing techniques are crucial in reducing the transmission of infectious diseases.

Moreover, in a comprehensive study on personal cleanliness, conducted by Johnson et al., (2020), the authors found that poor hygiene practices can lead to a wide range of health issues, including skin infections and respiratory illnesses. As highlighted by Brown et al., (2018), the impact of socio-cultural factors on personal cleanliness practices among different communities, emphasizing the need for tailored hygiene education programs.

Additionally, as conducted by Williams et al., (2021), the authors concluded that using alcohol-based hand sanitizers is an effective way to reduce the spread of harmful pathogens. Examine the effectiveness of various cleaning products and techniques in removing harmful bacteria and viruses. Focuses on the relationship between personal cleanliness and mental health, highlighting the importance of self-care and hygiene practices in promoting overall well-being.

According to Patel et al., (2017), on personal cleanliness and mental health, practicing good hygiene habits can have a positive impact on overall well-being, reducing stress and anxiety levels.

Housekeeping and management. In a study conducted by Molina et al., (2016), they found that karenderya operators who had undergone food safety and sanitation training had better knowledge, attitude, and practices towards food safety and sanitation. They also emphasized the importance of proper housekeeping and management practices, such as regular cleaning and disinfection of surfaces and utensils, proper waste management, and employee hygiene. Another study by Cabalda et al., (2018), investigated the factors that influenced the adoption of food safety and sanitation practices among karenderya operators in Cebu City, Philippines. They found that the level of education, access to training, and availability of resources and equipment significantly influenced the adoption of food safety practices. In a review by Tapia et al., (2017), on the challenges and opportunities for small-scale food businesses in the Philippines, they highlighted the importance of improving food safety and sanitation practices among karenderyas. They recommended the implementation of food safety standards and regulations, the provision of training and technical assistance, and the use of appropriate technology and equipment to improve food safety and sanitation.

A study by (Dary & Tung, 2018), assessed the food safety practices and hygiene of street food vendors in Vietnam. They found that poor hygiene and sanitation practices, such as inadequate hand washing, improper food handling, and unsanitary food storage, were significant risk factors for foodborne illnesses. They recommended the implementation of food safety regulations, training, and education to improve the hygiene and sanitation practices of street food vendors.

A study by Bhatia et al., (2019), investigated the food safety knowledge, attitudes, and practices of food handlers in India. They found that inadequate knowledge and lack of training were significant barriers to the adoption of food safety practices. They recommended the provision of training and education, as well as the implementation of food safety regulations and standards, to improve the food safety practices of food handlers.

According to Sandolo et al., (2020), investigated the food safety and sanitation practices of street food vendors in Tanzania and found that customers had limited knowledge and awareness about food safety and sanitation practices. They recommended the need for public education campaigns to improve customer awareness and involvement in promoting food safety and sanitation. In a study by Youssef et al., (2019), on the factors influencing food safety and hygiene practices in small food businesses in Egypt, they found that customers had a significant impact on the adoption of food safety practices by these businesses. They recommended the need for customer education and engagement in promoting food safety and hygiene.

As highlighted by Baker et al., (2016), investigated the impact of customer reviews on restaurant hygiene and safety practices in the United Kingdom. They found that positive reviews significantly influenced the adoption

of food safety and hygiene practices by restaurants. They recommended the need for customer education and awareness-raising campaigns to improve food safety and hygiene practices.

Furthermore, a study by Balaji et al., (2020), investigated the factors influencing the adoption of food safety and hygiene practices among street food vendors in India. They found that customer demand for safe and hygienic food significantly influenced the adoption of food safety practices by these vendors. They recommended the need for customer education and awareness-raising campaigns to promote safe and hygienic street food. A study by Wu et al., (2018), investigated the factors influencing food safety and hygiene practices in small food businesses in China. They found that customer education and awareness-raising campaigns were effective in improving food safety and hygiene practices. They recommended the need for continued customer education and involvement in promoting food safety and hygiene practices.

Housekeeping and management factors: A study by Ahn et al., (2014), several factors influence housekeeping and management practices in food service establishments. These factors include management support, employee training, and availability of cleaning supplies and equipment. Effective management and employee training can positively impact housekeeping practices and improve food safety.

Customer factors: A study by Yen et al., (2017), found that customers' awareness and perception of food safety issues influenced their behavior and the level of cleanliness they expected from food service establishments. Customers who had higher levels of awareness of food safety concerns were more likely to demand high standards of cleanliness and hygiene from restaurants.

Impact of government regulations: Government regulations also play a significant role in maintaining food safety and sanitation practices in restaurants. A study by Wan et al., (2015), found that the implementation of government regulations, such as food safety training and certification programs, had a positive impact on the level of cleanliness and hygiene in food service establishments.

Condition of appliance/s and utensils. According to a study by (Tawfik & Sobhy, 2019), factors affecting food safety practices in restaurants include inadequate hygiene and sanitation practices, lack of knowledge and training among food handlers, and inadequate supervision by management. A study by Adhikari et al., (2018), found that restaurant cleanliness, availability of soap and water for hand washing, and availability of clean utensils and surfaces were among the key factors influencing food safety practices in restaurants. In a study by Anuradha et al., (2019), it was found that customers' awareness and knowledge about food safety practices play a crucial role in ensuring food safety in restaurants. The study also highlighted the importance of communication between customers and restaurant staff regarding food safety practices. A study by Odeyemi et al., (2018), revealed that effective management practices, including regular training and monitoring of food handlers, as well as strict adherence to food safety regulations, are critical for ensuring food safety in restaurants. Additionally, a study by Nkere et al., (2018), the physical condition of restaurants, including the cleanliness of the environment, the quality of the facilities, and the maintenance of equipment, also significantly influence food safety practices in restaurants.

Food handling practices: According to a study by Lin et al., (2013), poor food handling practices can lead to contamination of utensils and appliances, which can in turn cause foodborne illness. Proper food handling practices such as frequent hand washing, using separate utensils for different food items, and regular cleaning of utensils and appliances can help maintain their sanitary conditions.

Cleaning and disinfecting: Regular cleaning and disinfecting of appliances and utensils are essential in maintaining their sanitary conditions. A study by Buck et al., (2013), found that using disinfectants such as bleach or quaternary ammonium compounds can effectively reduce the levels of bacteria on utensils and appliances.

Material of appliances and utensils: The type of material used in making appliances and utensils can also affect their sanitary conditions. A study by Nasser et al., (2017), found that utensils made of stainless steel were easier to clean and maintain sanitary conditions compared to those made of plastic.

Storage and handling: Proper storage and handling of appliances and utensils can also contribute to their sanitary conditions. A study by Almeida et al., (2014), found that storing utensils and appliances in a clean and dry environment can help prevent the growth of bacteria.

Training and education: Proper training and education of restaurant staff can also play a significant role in maintaining the sanitary conditions of appliances and utensils. A study by Li et al., (2014), found that providing regular training on food safety practices to restaurant staff can help reduce the incidence of foodborne illness.

Sanitary condition of appliance/s and utensils. A study by Rizal et al., (2017), found that inadequate cleaning and disinfection of kitchen surfaces, utensils, and equipment were the main contributing factors to the contamination of food in Malaysian restaurants. Another study by Sharif et al., (2016), in Pakistan revealed that lack of awareness and knowledge about food safety and sanitation practices among restaurant workers was a significant factor contributing to the poor sanitary condition of utensils and appliances.

A review article by (Meftah & D'Amico, 2016), identified several factors that affect the efficacy of cleaning and sanitizing in food service establishments, including the type and quality of cleaning agents used, the temperature and contact time of the cleaning solution, and the design and material of the utensils and appliances. According to Wang et al., (2019), in China found that the frequency of cleaning and disinfection of utensils and appliances was positively associated with the sanitary condition of the kitchen and the quality of the food served in restaurants.

A systematic review by Redmond et al., (2013), identified several interventions aimed at improving the sanitary conditions of utensils and appliances in food service establishments, including the implementation of food safety management systems, staff training programs, and the use of technology-based solutions.

In conclusion, several factors have been identified in the literature that can affect the sanitary condition of appliances and utensils in food safety and sanitation practices among restaurants. These factors include inadequate cleaning and disinfection practices, lack of awareness and knowledge about food safety and sanitation practices among restaurant workers, the type and quality of cleaning agents used, the temperature and contact time of the cleaning solution, the design and material of the utensils and appliances, and the frequency of cleaning and disinfection.

Studies have shown that poor sanitary conditions of utensils and appliances can lead to the contamination of food and pose a significant risk to public health. Therefore, interventions aimed at improving the sanitary conditions of utensils and appliances in food service establishments, such as the implementation of food safety management systems, staff training programs, and the use of technology-based solutions, have been recommended in the literature.

Overall, the literature highlights the importance of maintaining proper sanitary conditions of appliances and utensils in food safety and sanitation practices among restaurants to ensure the safety and quality of the food served to customers.

According to (Addams, 2018), when food is prepared on a large scale, it may be handled by numerous people, increasing the likelihood that the finished product will be contaminated. The circumstances that enable the multiplication and spread of disease-causing organisms, such as bacteria, viruses, and other food-borne pathogens, are created by unhygienic activities during food preparation, handling, and storage (Fieldings, 2017).

Furthermore, according to (WHO, 2019), a large number of reported cases of food-borne viral illnesses have been linked to sick food handlers working in the catering industry.

The scale of foodborne diseases (FBDs) brought on by tainted food and water considerably contributed to a wide range of health issues, according to a World Health Organization report from 2013. Despite the implementation of extensive steps to reduce food-related disorders, FBDs were reportedly on the rise.

The Centers for Disease Control and Prevention (CDC, 2015) ascribed this higher tendency to exposure to toxic levels from industrial effluents and an increase in the rate at which disease-causing bacteria multiply. Inadequate cooking, incorrect keeping temperatures, and the use of contaminated equipment were also mentioned by the (CDC, 2016). Although FBD symptoms varied from person to person and from location to location, frequent symptoms included everything from minor gastroenteritis to potentially fatal neurologic, hepatic, and renal disorders (Hughes, 2018).

Disease Control. A study conducted by Shrestha et al., (2019), found that the level of knowledge and attitude of food handlers towards food safety significantly impacted the implementation of food safety practices in restaurants. Another study by Gakuya et al., (2019) identified lack of training and education, inadequate resources, and poor personal hygiene as the main factors affecting food safety practices in restaurants. A systematic review by Reis et al., (2019), showed that food safety management systems, such as Hazard Analysis and Critical Control Points (HACCP), significantly improved the implementation of food safety practices in restaurants. A study by Kim et al., (2020) found that the level of commitment and support from restaurant management towards food safety practices significantly influenced the implementation of these practices by food handlers. A study by Guranlioglu et al., (2019), highlighted the importance of communication and collaboration among food handlers, restaurant management, and regulatory authorities to ensure effective implementation of food safety practices in restaurants.

In a study by Parreño et al., (2017), in the Philippines, it was found that factors such as knowledge of food safety, attitude towards food safety, and training were significant predictors of food safety practices among food handlers in restaurants. The study also found that the implementation of food safety management systems positively influenced food safety practices.

According to Fajardo et al., (2019), in the Philippines, identified factors such as the availability of facilities for hand washing, the use of gloves and hairnets, and the use of thermometers to monitor food temperatures as critical in ensuring food safety in restaurants. The study also found that the lack of a proper waste disposal system and inadequate ventilation negatively affected food safety practices. In a study by Alcancia et al., (2019), in the

Philippines, it was found that the type of restaurant (i.e., fast food versus full-service) was a significant predictor of food safety practices. The study found that fast food restaurants had better food safety practices compared to full-service restaurants. A study by Castro et al., (2019) in the Philippines, identified factors such as the level of education of food handlers, the availability of food safety training programs, and the implementation of food safety policies as significant predictors of food safety practices in restaurants. The study found that food handlers with higher levels of education had better food safety practices compared to those with lower levels of education. In a study by Olarte et al., (2018) in the Philippines, it was found that factors such as the availability of hand washing facilities, the use of gloves and hairnets, and the implementation of food safety management systems positively influenced food safety practices in restaurants.

Miscellaneous. According to Ocampo et al., (2021), the display of sanitary permits and sanitation standard rating is a critical factor in ensuring food safety and sanitation practices among restaurants in the Philippines. The authors found that restaurants that displayed their sanitary permits and sanitation standard rating had better compliance with food safety regulations and better overall sanitation practices. In a study conducted by Palencia et al., (2019), the authors investigated the relationship between the display of sanitary permits and sanitation standard rating and the food safety knowledge and practices of food handlers in the Philippines. The authors found that food handlers who worked in restaurants that displayed their sanitary permits and sanitation standard rating had better food safety knowledge and practices than those who worked in restaurants that did not display them.

Another study conducted by Dela Cruz et al., (2018), the authors investigated the factors that influence the display of sanitary permits and sanitation standard rating among restaurants in the Philippines. The authors found that the main factors that influence the display of these permits are the restaurant's compliance with food safety regulations, the restaurant's size and type, and the availability of resources to comply with food safety regulations.

Similarly, in a study conducted by Salvaña et al., (2021), the authors examined the relationship between the display of sanitary permits and sanitation standard rating and the food safety practices of restaurants in the Philippines. The authors found that restaurants that displayed their sanitary permits and sanitation standard rating had better food safety practices than those that did not display them.

Moreover, in a study conducted by Ramos et al., (2020), the authors investigated the effect of food safety training on the display of sanitary permits and sanitation standard rating among restaurants in the Philippines. The authors found that restaurants that provided food safety training to their staff were more likely to display their sanitary permits and sanitation standard rating than those that did not provide such training.

2.2 The Effectiveness of the Food Safety and Sanitation Practices

According to Azanaw et al., (2019), In the Philippines, food handlers were not obliged to register for food safety certification or to get sanitary permits., resulting in unsafe and inappropriate food preparation methods that expose customers to food related disease. Reheating, undercooked food, chilling of food, poor preparation, contamination, improper processing, and unsanitary circumstances have all been related to food borne illness.

Due to the fast development of online food that may or may not meet food safety standards, according to (Aning & Madarang, 2020), It is critical to problematize the various handling methods at whichever point along the supply chain, especially when food is delivered to households. In light of these situations and aspirations, the behaviors of home-based food handlers who work in the online food market were investigated in this study. It uses food safety rules and regulations as a lens to identify flaws that might pose serious health risks. During the pandemic, food handlers' self-reported and observed food safety procedures were the subject of this study.

It also intended to see if there was a relationship between participants' demographic features and their self-reported food safety processes, and the inconsistencies in observed and self-reported health and safety processes. In training intervention, three components were targeted for behavioral change: attitude, normative beliefs, and perceived behavioral control. It detailed the dangers of food handlers failing to follow proper safety requirements and good and bad practices, health and economic consequences of food borne disease outbreaks, people who are at threat, as well as related policies and rules. To combat normative ideas, food safety professionals emphasized the need to follow the rules and emphasized the employees' duty Husain et al., (2016).

Moreover, Knowledge-based training is an educational technique that focuses on equipping employees with critical safety aspects, such as scientific knowledge. Operational infractions, which raise the risk of Food borne Illness outbreaks, have been linked to a lack of food-safety understanding, according to studies. A trained food handler is expected to have more knowledge and adopt better practices as a result of their education. Anyone with a higher degree of education shares their expertise with food handlers in the aim of influencing others who are less educated to make positive changes (Husain, 2016).

Food safety training programs are important for lowering the chance of tainted veggies being shipped to customers around the world. Any food safety system must include training. Inadequate food and hygiene training

has an impact on food safety; thus, effective training is critical for successfully establishing a food safety management system. Employees handling foods, according to food safety training programs, should learn how food can become damaged and what to do if food gets damaged. Employees who will be handling food products should receive food safety training so that they are aware of how food can become contaminated. Food-borne illnesses, food poisoning, and other diseases may emerge as a result of food handlers' lack of training (Gavin, 2016).

A number of studies have demonstrated that food safety training is a great method in order to improve food workers' intellect and behaviors. Food safety training has been shown to lower the occurrence of food-borne illnesses by raising awareness among employees, desire, behaviors, including safe food handling abilities. Food handlers have benefited from food safety training in order to increase their knowledge and skills. It was also discovered that food safety training lowers the risk of food-borne illness (Malavi, 2021).

Infected food workers were able to spread the disease to others. Food handlers are essential in guaranteeing food safety and avoiding food illness. Poor personal hygiene behaviors are agents of gastrointestinal infectious illnesses. Salmonella was effectively isolated from seafood in a prior investigation, however, Salmonella is a rare carrier. Cross-contamination from sick food workers was responsible. Furthermore, multiple studies have shown similarities between infections recovered from patients and those isolated from food workers, implying that kitchen staff were food borne pathogen transmitting vehicles. Food handlers with a good understanding of basic food handling methods may be able to assist in controlling food poisoning, instances because they are in direct touch with food, especially ready-to-eat items. According to the study, cross-contamination of food products by infected hands can easily transfer food borne diseases. Food safety, not just the food handlers, has a significant impact on a company's reputation. To avoid a food borne illness epidemic in the workplace that can spread to customers, food handlers should follow basic safety measures. Food handlers should follow basic safety standards to avoid a food borne disease epidemic in the workplace that could spread to consumers, and those handlers who have a complete awareness of safe food handling techniques may be able to help reduce the number of food poisoning cases Lee et al., (2017).

Food is essential for good health. As a result, food safety should be seen as a fundamental human right. A large number of people may be exposed to tainted food. Millions of people become ill each year, and hundreds of thousands die. Food safety concerns have not diminished in the twenty-first century. Local outbreaks can swiftly become global problems due to the speed and breadth of product dissemination. In every country, severe food borne disease outbreaks have occurred. Science and fair law enforcement are essential for food safety. New rules must be established on a regular basis to maintain a consistent supply of safe and healthy food items for people's health and well-being (Menon, 2018).

Food safety and hygiene are crucial for businesses because they protect customers from food borne illnesses and poisoning. When germs, viruses, and other microorganisms infect food, it causes food poisoning in those who ingest it. Food poisoning may typically be treated at home in less than a week, but it might be dangerous and demands medical attention right once. As a result, it's critical to know how to keep customers safe from food poisoning (Rennie, 2020).

The chef faces numerous risks when it comes to pacing the kitchen. This threat may occur if the kitchen staff is limited and attempting to fill all of the kitchen's tasks, which can put them under a lot of pressure when serving their customers. Their stresses can lead to incidents such as blisters, wounds, slipping and falling, and fatigue, which can have an impact on employee and service performance (Tony Myles, 2016).

The risks of becoming a cook are not just for their physical performance, as well as for their mental stress and duties in their lives. Every chef must sustain a high performance at all times. They must guarantee sufficient staffing, as well as the ability to deal with the day-to-day problems that arise, as well as some staff conflicts. Because of these factors, they may experience mental stress and be unable to enjoy their normal lives outside. To maintain good performance, they dedicate their full attention to their work (Fred Decker, 2016).

A study by Cheng et al., (2018) found that, age can have a significant impact on food safety and sanitation practices among karenderyas (small food establishments) as older individuals may have different knowledge, attitudes, and behaviors related to food handling and hygiene. While there is limited research specifically focused on karenderyas, studies conducted in broader food service settings shed light on the impact of age on food safety practices. Older individuals may have acquired their food safety knowledge and skills many years ago and may not be aware of more recent advancements in food safety practices. Lack of awareness about proper food safety practices could increase the risk of foodborne illnesses. Attitudes towards food safety and sanitation can vary among different age groups.

2.3 Consumer Response to Food Safety Concerns

The ability for a fast-food restaurant to succeed reflects demographic and socioeconomic standards (Quinlan, 2013). The business strategy of quick service restaurants was to operate through the consumer's eyes and concentrate on distinguishing the company policy from other categories within the restaurant businesses (Mason, Jones, Benefield, & Walton, 2013).

Likewise, restaurant operators manage to provide consumers with safe and nutritious foods. Quinlan found crucial, safeguarding consumers' welfare similarly to educating and setting the foundations for lasting sponsorship and mutual consumer-business benefits. For the same reason, citizens were aware of food safety issues in the restaurant industry (Quinlan, 2013).

Arnade et al., (2013), stated when the security of the product becomes a public issue; consumer surveys serve to measure the reaction and the potential economic impact. Using shifting quantity of news containing both warnings and safety declarations to augment a conventional model of consumer economic behavior. From a business standpoint, customer retention was crucial to commercial success (Carter & Baghurst, 2014). Owners must balance the cost of customer retention and the operational effectiveness to be profitable (Wilder, Collier, & Barnes, 2014).

Thus, food safety was a significant distress for consumers and food service workers in the United States. Restaurant visitors noted disappointments in the restaurant setting related to core attributes, such as poor food quality, resulting in a remarkable effect on the economy Wilder et al., (2014). Likewise, the relationship influences consumer confidence for the food producers (Kheradia & Warriner, 2013).

The perception of front line consumer services personnel and customer about the quality of service in a group of fast-food establishments. Customers agree the purchaser awareness about food safety might influence the quality of food served by vendors. The theoretical foundation of the study comprised the customer satisfaction and the customer service theories Wilder et al., (2014).

Previous studies conducted by Mason et al., (2013), identified a significant gap in perception and evidence among the less educated consumers. In fact, consumers were more aware of the content and effects of the pollutants of nutrients in products such as fish. However, ordinary consumers have few opportunities to evaluate the food handling controls of food service establishment. Most consumers depend on publications and reports, which the health department publishes on the issue of health inspection results. As an alternative, consumers must look for certifications posted in the restaurant. Consumers, consequently, carry presuppositions and observations regarding the safety and cleanliness practices of the restaurant.

The food service hygiene was a determinant factor when people decided to eat out, and consequently a direct influence on business sales Strohbehn et al., (2013). The results indicated the cleanliness of the food was an important deciding factor. A more recent study by Mason et al. (2013), validated results of Strohbehn et al., (2013), and Waters et al., (2013).

Cleanliness of the restaurant was an important factor for customers, including cleanliness of restrooms, kitchen, and the restaurant. These factors influence customer decisions and selection of eating out. The factor with less relevance included a nutritional menu with local and ethnic foods, menu item variety, and availability of a children's menu Mason et al., (2013).

2.4 Economic Impact of Food-borne Illnesses

Food supply and food safety were foremost global public health issues and were predominantly significant in densely populated countries. Indeed, an increased request for food supplies Lam et al., (2013). Restaurant owners have recognized food quality, and hygiene was crucial factors in the sustainability of the restaurant business because customer perception influenced customer patronage. Customer retention was a significant element of the fast-food industry in a progressively competitive environment (Saguy & Sirotinskaya, 2014).

Regulatory authorities, including the Food Standards Agency (FSA), estimated the economic loss related to food illnesses in \$1.4 billion with about 765,000 reported cases in 2006. Some researchers have stated additional food safety controls have had a direct influence on higher food costs to the consumer (Gaungoo & Jeewon, 2013). Public authorities have put emphasis on regulations to control and prevent contracting food pathogens. However, researchers warn of the concern of the food industry about the potential economic impact of the measures Parsa et al., (2015).

The literature revealed a vast range of business and productivity costs connected with the lack of resources to trace product quality within the restaurant industry. For example, although ciguatera fish poisoning was a common form of the seafood intoxication globally, it has been challenging to estimate the related disease and economic burdens. The FDA estimated at approximately \$700 million annual cost to the industry to establish new measures of prevention. Financial analysts predicted a substantial adverse effect on the health of the businesses forced to close operations under the protection of bankruptcy law. In jurisdictions outside the United States,

franchises in the fast-foods industry divide into administrative districts. Annually, researchers analyzed the behavior of these administrative districts. Likewise, financial experts in the fast-food business and economy strategist assess the distribution of market shares in existing fast-food areas Parsa et al., (2015).

Food-transmitted diseases influence health and imply a serious threat to society regardless of jurisdiction. Two indicators of interest were the number of cases of FBD and the number of deaths aimed to be able to understand the magnitude of the problem in a coherent manner. The issue of food safety has become vital to the economy of all countries of the world. In China, the speed with which the Chinese economy has grown has forced the gradual change in the food supply approach for food security. In economically valuable times, China's GDP surpassed \$7.2 trillion in 2011, resulting in 11.8% of the world's economy Lam et al., (2013).

In Greece, from 1996 to 2006, researchers collected information from the surveillance data, hospital statistics, and published literature. The estimated result was 896 disability-adjusted life years (DALY) per million of inhabitants. The estimation comprised 370,000 illnesses per million of inhabitants probably caused by eating contaminated food, and 900 of these occurrences were severe, and three of them fatal (Saguy & Sirotinskaya, 2014).

2.5 Industry Responses to Food Safety Concerns

According to the BLS (2013), the fast-food restaurants and food service restaurant managers held approximately 320,600 jobs in 2010, with a projected decrease of 3% of the employment of food service managers from 2010 to 2020. The median wage of fast-food restaurant managers was \$48,130 per year, \$23.14 per hour in the United States. The position often requires long hours of restaurant management. Typically, fast-food restaurant managers dedicate 12 to 15 hours per day, adding up to more than 45 hours weekly. Likewise, managers occasionally work seven days a week. Inversely to restaurant managers, institutional foodservice operators, such as school managers and factory managers, work regular hours. Managers, who supervise multiple units of a chain of restaurants or franchises, work on short notice, including nights and weekends. This responsibility increases pressure and severe business problems. With the increasing activity of eating out, food safety became a critical contributor to physical well-being. Defended the existence of evidence of the relationship between customer satisfaction, service quality, assessment, and restaurant cleanliness Mason et al., (2013).

Restaurant owners use consumer satisfaction as a metric to predict repeat patronage, which points to trademark loyalty and new customers through word-of-mouth promotion and sustain profitable operations. The responsibilities involved in restaurant management require previous food service experience and cost controls. Still, an upward number of manager positions require formal education in business, hospitality, or restaurant management program (Carter & Baghurst, 2014).

Food safety inspections. Explored the topic of perceptions of restaurant operators and managers concerning food service inspections. The investigators aimed to uncover factors influenced the practices used by food inspectors during the inspections. An exploration of the impact of inspections of food service business was relevant for the restaurant business sustainability Waters et al., (2013).

Administrators safeguard customers were satisfied with their eating experience and business repetition. Public health examination records, aid customers to be aware of restaurants violating health codes (Kang, Kuznetsova, Choi, & Luca, 2013). In some cities, such as Los Angeles and New York, the government requires restaurants owners to post their inspection scores at their locations, affecting the revenue of the business significantly; subsequently, inspiring restaurant owners to advance their sanitary practice improving business financial status Kang et al., (2013).

Food safety strategies. Restaurant operators must manage to train as an asset to ensure the direct influence observed to business growth and profits. Foodborne illnesses drain restaurants of profits regarding potential lawsuits and lost customers. Besides, the training process contributes to business sustainability by significantly reducing food waste and improving the production and quality of food. Food poisoning occurs because of the ignorance related to proper food handling, legal responsibilities, and negative business consequences. Training programs increase owners, managers and coworkers' understanding of responsibilities and improve their skills. Training can also improve business cost control, upsize sales volume and profit, job satisfaction, management skills, generate pride in appearance and team spirit, and increase the number of hours of supervision responsibilities. Training programs contribute to productivity and the economic health of restaurants by reducing the staff turnover, which was one crucial cost of a restaurant business (Gaungoo & Jeewon, 2013).

Conversely, for Howell (2013) organizational leaders face serious problems during economic downturns because management does not prioritize training caused by budget cuts and short-term priorities. For example, food safety educational resources may be difficult or costly to obtain Manes et al., (2013)

Arendt et al., (2013), found managers and owners indisposed to consent, employees, and the chance to participate in training even with no charge. Strohbahn et al. (2013), found proper performance management rarely processes work well, because of onerous managerial phases, procedures, and tools incoherent in the daily activities and failing in their implementation. From the restaurant business and food safety standpoint, this might represent a risk for any business operation and liability controls.

Nevertheless, administrators improved performance management when they focused on employee commitment and facilitated the tools to develop the performance skills Albrecht et al., (2015). In this way, managers and owners control the outcome expected, and at the same time, bring more accurate performance projections Albrecht et al., (2015).

Arendt et al., (2014), explored the influence of front line employees' perceptions about food safety issues foremost in enhanced hygienic operations in the food service establishments. The authors measured the attitudes of the employees regarding the training program, self-assessment, social contribution, and the design of the facility, organizational culture, and health department relations. Considered restaurants perfect for the study; these foodservice units involved the more on-site complex operation, placing them on the brink of the potential foodborne illness outbreak. The outcome of the study supports the theory the workers' outlook has a significant role in transferring knowledge and skills gained in training. Further, the study results show a positive correlation between positive restaurant inspection scores, their self-involvement, and social accountability. Making necessary to explore the effect of measures to improve food safety regulations, food safety practices, and the impact of foodborne events (outbreaks).

Arendt et al., (2013), investigated the backgrounds affecting restaurant administrators' readiness to backing food safety training for staff. The theory of planned behavior for the analysis and found subjective standards observed behavioral control worked as a crucial role in offering to train to employees. This factor was important for the study of food safety issues in contrast to customers, employees, and owners' perception.

3. METHODOLOGY

3.1 Research Locale

The coverage of the study was located in Poblacion, Cateel, Davao Oriental. It is a second-class municipality, thus making it a partial urban, situated in the Northeastern tip of the province of Davao Oriental, and is composed of 16 Barangay. With this, it is inevitable for this locale to experience academic and social problems that needs immediate response and treatment. And it is with this light why Cateel has been chosen by the researchers as the research locale for the study Food Safety and Sanitation practices among Karenderyas in Poblacion, Cateel.



Figure 1. Map of Cateel, Davao Oriental

3.2 Research Design

The researcher use descriptive correlational research design to examine the relationship between food safety knowledge and the frequency of hand washing among karenderya workers and owners. The researcher would collect data on the knowledge of food safety practices and the frequency of hand washing, and then use statistical analysis to determine if there is a correlation between the two variables. One advantage of using descriptive

correlational research design in this context is that it allows researchers to gather information on food safety and sanitation practices in a real-world setting, rather than in a controlled laboratory environment. This can provide valuable insights into the challenges faced by karenderya workers in implementing safe food handling practices (Smith, J. R., 2021).

3.3 Research Instrument

The instrument that used in the study was researcher- made questionnaire. The contents of the questionnaire was based on the provisions under the Presidential Decree No. 856 Promulgating the Code on Sanitation in the Philippines. The questionnaire was specifically focus in the Food Safety and Sanitation Practices among karenderyas in Poblacion Cateel. Furthermore, it was undergo reliability and validity testing through a pilot test study before being administered to the actual respondents of the research study in Poblacion Cateel. The validation of the instrument was done by an authority expert in this field.

It is suggested that reliability should be equal to or above 0.60 have suggested four cut-off points for reliability, which include excellent reliability (0.90 and above), high reliability (0.70-0.90), moderate reliability (0.50-0.70) and low reliability (0.50 and below).

3.4 Respondents of the Study

The respondents of this study was the owner and workers of the food establishments. In this study, the researchers used researcher-made questionnaire on code on sanitation as the primary source of data. This study has been used convenience sampling to gather the data. This study was involved 50 respondents – 30 workers and 20 owners – from a total of 50 Karenderyas in Poblacion Cateel.

4. RESULTS AND DISCUSSION

This chapter reveals and discusses the results of the study. It answers the questions related the food safety and sanitation practices among karenderyas. This research uses descriptive quantitative study. For the first part, a sequence of tables is presented with their corresponding interpretation.

4.1 Profile of the Respondents

The profile of respondents in terms of their age, sex, and role in the industry. Followed by the level of food safety and sanitation practices among karenderyas in Poblacion Cateel. Lastly, the significant difference on the level of Food Safety and Sanitation Practices among Karenderyas in Poblacion Cateel when grouped according to age, sex, and role in the industry. A total of 50 respondents.

Table 1. Demographic profile of food safety and sanitation practices in terms of sex

Category	Frequency	Percentage
Male	16	31.4
Female	34	66.7
Total	50	100.0

The data presented in Table 1 provides information about the demographic characteristics of the respondents. Out of the total 50 respondents, 66.7% were female, while the remaining were male. This indicates a higher representation of female respondents in the study.

Table 2. Demographic profile of food safety and sanitation practices in terms of age

Category	Frequency	Percentage
20 years old below	4	7.8
21-30 years old	9	17.6
31-40 years old	8	15.7
41-50 years old	19	37.3
51 and above	10	19.6
Total	50	100.0

Furthermore, the data reveals that the majority of respondents fall within the 41-50 years age group, comprising 37.3% of the total respondents. This suggests that middle-aged individuals are more prominent among the surveyed population.

Table 3. Demographic profile of food safety and sanitation practices in terms of role in the industry

Category	Frequency	Percentage
Owner	20	39.2
Worker	30	58.8
Total	50	100.0

In terms of occupation, the data shows that 58.8% of the respondents are workers, while the remaining respondents are karenderyas owners. This highlights the fact that a significant proportion of the participants are individuals working in karenderyas rather than the actual owners.

While there may not be specific literature directly addressing the interpretation of the demographic data you provided, understanding the importance of demographic characteristics in research studies is widely recognized. Demographic information helps researchers assess the representativeness of their sample and consider potential variations or biases that may influence the results. Here are a few points supported by relevant literature:

Demographic information allows researchers to assess how well their sample represents the target population. It helps determine if the findings can be generalized to a larger population. This consideration is crucial for ensuring the external validity of the study (Skowronek & Duerr, 2009).

Demographic characteristics can reveal potential variations and biases that may influence the research outcomes. Factors such as age, gender, and occupation can affect people's behaviors, attitudes, and experiences, including their practices related to food safety and sanitation (Nivette, 2011).

Demographic information provides insights into the context of the study. Factors such as age and occupation can help researchers understand the specific challenges and considerations that individuals in different groups may face in practicing food safety and sanitation (Rudolph et al., 2021).

Researchers can conduct subgroup analyses based on demographic characteristics to explore potential differences in food safety practices among different groups. This can provide valuable insights into specific population segments and inform targeted interventions (Wang et al., 2007).

4.2 Level of Food Safety and Sanitation Practices among Karenderyas in Poblacion Cateel

Construction of Premises. The data presented in table 4 indicates that the food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of the construction of floors, walls, and ceilings. The mean scores of 4.09 for floors, 4.00 for walls, and 4.07 for ceilings suggest that these establishments consistently prioritize and demonstrate good practices in maintaining clean and hygienic environments.

Table 4. Level of food safety and sanitation practices on constructions of premises

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
A.1. Floors				
The site is far from potential annoyance sources and that only sturdy building materials are permitted.	.744	4.24	Very high	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
Flooring is made of supple, waterproof materials.	.795	3.98	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.

The floor is covered with linoleum, rubber with a smooth surface, or another similar material that is glued to the floor with cement or suitable adhesive.	.746	4.12	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The inside surfaces of walls are made of dust-proof materials.	.729	4.14	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The wall surface are smooth.	1.043	3.88	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The walls are made non-absorbent, and easily cleanable.	.832	4.04	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The walls is painted in light colors.	.797	4.24	Very High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
The entire under-surface of the roof or the ceiling is dust-proof and washable.	.789	4.10	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.525383	4.09	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.

A.2. Walls				
Lighting is present in areas where food is prepared, packed, or handled, as well as areas where utensils or hands are washed.	.824	4.12	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The minimum light illumination intensity of 5 foot candles is present in areas where food is consumed	.789	4.10	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The lighting illumination intensity is taken 30 inches (76.20 cm) above the ground.	.931	3.90	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The lighting is evenly distributed and reasonably free from glare in order to prevent shadows	.904	3.72	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.55441	4.00	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.

A.3 Ceilings				
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The ventilation is provided and effective to maintain comfortable condition.	.781	3.96	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The ventilation is adequate to prevent the air from becoming excessively heated, prevent condensation and the formation of excess moisture on walls, ceilings and for the removal of objectionable odors, fumes, and impurities.	.782	4.00	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Canopies, air ducts, fans or other appliances is provided.	.804	4.08	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
There is sufficient floor space to enable every person working thereon to carry out his duties efficiently and to permit easy access for cleaning.	.807	4.04	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Working spaces, aisles or passageways and areas to which customers have access is unobstructed and sufficient to permit movement of employees.	.804	3.92	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
There is adequate and suitable lockers or, changerooms other facilities for the orderly storage of clothing and personal belongings of employees or persons engaged or employed in the premises.	.840	4.22	Very High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
Changerooms is situated and arranged so that there is no contamination of food by contact with clothing.	.728	4.20	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
In changerooms where the number of persons engaged or employed is four or more of either sex, there is a provided separate changing rooms for each sex.	.729	4.14	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.521331	4.07	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

The results supports the notion that proper construction and infrastructure contribute to food safety and sanitation in food establishments. A study by Zune, Rodrigues, & Gillott, (2019) conducted in Myanmar found that

structural factors, including the construction materials of floors, walls, and ceilings, significantly influenced food safety practices. Similarly, Carrasco, Morales-Rueda, & García-Gimeno (2012) highlighted the importance of suitable construction materials and techniques to prevent microbial contamination in food service establishments.

The high mean score of 4.09 for the construction of floors suggests that karenderyas in Poblacion Cateel are mindful of selecting appropriate materials and techniques to construct floors that minimize the risk of contamination and facilitate effective cleaning. This finding aligns with the importance of proper flooring materials and designs in preventing cross-contamination and maintaining a sanitary environment, as emphasized by Browne (2021).

Likewise, the high mean scores of 4.00 for walls and 4.07 for ceilings indicate that karenderyas in Poblacion Cateel pay attention to constructing these areas in a manner that discourages the accumulation of dirt, pests, or other potential sources of contamination. Clean and well-maintained walls and ceilings are crucial in preventing the growth and spread of bacteria and pathogens, as highlighted by Cinar & Onbaşı, (2021).

Overall, the findings from table 4 suggest that karenderyas in Poblacion Cateel prioritize food safety and sanitation practices in terms of the construction of floors, walls, and ceilings. These findings align with related literature emphasizing the significance of suitable construction materials, techniques, and designs in preventing contamination and maintaining a hygienic environment. It is important to note that other factors beyond infrastructure also contribute to overall food safety, such as proper food handling practices, employee training, and regular inspections.

Maintenance of Premises. The data presented in Table 5 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of regular check as maintenance of the premises and considering space and access. The mean scores of 4.19 for regular check and maintenance, and 4.16 for space and access, suggest that these establishments consistently prioritize and demonstrate good practices in these areas.

Table 5. Level of food safety and sanitation practices on maintenance of premises

Indicators	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
B.1. Regular checks				
There is an established and documented procedure for maintenance, cleaning and sanitation of establishment in place.	.722	4.36	Very High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
The establishment's structures, furnishings, and other facilities is kept in good shape and cleaned.	.767	4.06	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Equipment needs to be maintained in a suitable state of repair and condition to work as intended.	.850	4.18	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Follows a standard procedure relevant to the nature of the food establishment, and cleaning removes food residues and filth.	.708	4.22	Very high	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
Establishes a routine for inspecting all areas of the premises, especially those where food is handled.	.833	4.20	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
External and interior aspects of the property, such as, yards, loading and unloading zones, is	.849	4.12	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often

inspected.				manifested.
Grand Mean	.547112	4.19	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.

B.2. Space and Access				
There must be enough room on the floor for each person working there to perform their duties effectively and to provide for easy cleaning access.	.857	4.20	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Working areas, aisles, and passageways, as well as locations where customers have access, must be clear of obstructions and large enough to allow for customer and employee movement without compromising food safety.	.857	4.14	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
For the orderly storage of clothing and other personal possessions of employees or anyone engaged or employed on the grounds, sufficient and appropriate lockers or other facilities are provided.	.790	4.22	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
There are separate changing rooms for each sex if there are four or more people engaged or hired of either sex.	.752	4.08	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.64831	4.16	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

The results supports the importance of regular checks and maintenance in ensuring food safety and sanitation. Regular inspections help identify potential risks and maintain cleanliness in food establishments (Cramer, 2013). Proper maintenance practices, such as cleaning, repair, and pest control, contribute to preventing contamination and ensuring a safe environment for food preparation and handling.

The high mean score of 4.19 for regular check and maintenance indicates that karenderyas in Poblacion Cateel actively monitor their premises, conducting routine inspections to identify and address any potential issues that may compromise food safety. This aligns with previous studies emphasizing the importance of regular inspections and corrective actions to maintain hygienic conditions and prevent foodborne illnesses (de Oliveira, et al., 2016).

Similarly, the high mean score of 4.16 for space and access suggests that karenderyas in Poblacion Cateel consider the layout and design of their premises. Adequate space and well-organized work areas promote proper segregation of food items, storage, and effective cleaning practices. This finding is consistent with research highlighting the importance of proper workspace design and layout in minimizing the risk of cross-contamination and facilitating hygienic practices (Mihalache et al., 2022).

In conclusion, the findings from Table 5 suggest that karenderyas in Poblacion Cateel prioritize food safety and sanitation practices in terms of regular check as maintenance of the premises and considering space and access. These findings align with related literature emphasizing the significance of regular inspections, maintenance, and

proper workspace design in ensuring hygienic conditions and preventing contamination. However, it is important to consider other factors and comprehensive practices to ensure overall food safety in karenderyas.

Toilet Provision. The data presented in Table 6 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is very high in terms of the provision of a toilet with clean and adequate facilities. The mean score of 4.22 suggests that these establishments consistently prioritize and maintain clean and well-equipped toilet facilities.

Table 6. Level of food safety and sanitation practices on toilet provision

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
C.1. Adequate and clean toilet facilities				
Adequate and clean toilet facilities for male, female, and disabled customers and employees is provided in properly located areas.	.876	4.26	Very high	The food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
The toilet facilities are accessible for the customers and employees.	.881	4.14	High	The food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Hand wash facilities are provided within or adjacent to the toilet room.	1.023	4.12	High	The food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Toilet rooms are completely enclosed, properly lighted, and ventilated	.833	4.14	High	The food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
The number of water closets, urinals, wash-hand basins shall be provided in accordance to the standard of the food safety and sanitation	.763	4.30	Very high	The food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
Has obtained the health authority's approval of the plans for the toilet and each individual sewage disposal system, sub-surface absorption system, or other treatment device as advised by the sanitary engineer.	.872	4.34	Very high	The food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
Grand Mean	.6063253	4.22	Very High	The food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.

It emphasizes the importance of proper sanitation facilities, including toilets, in food establishments. A study by Julien-Javaux, et. al. (2019) highlighted the significance of clean and well-maintained toilet facilities in preventing cross-contamination and ensuring hygienic practices. Good sanitation practices, including the availability of clean and adequate toilets, contribute to reducing the risk of foodborne illnesses (da Silva Farias, et al., 2019).

The high mean score of 4.22 for the provision of toilet facilities indicates that karenderyas in Poblacion Cateel understand the importance of having clean and adequately equipped toilets for both staff and customers. Clean toilets promote good hygiene practices, proper handwashing, and prevent the spread of pathogens. Adequate

facilities, such as handwashing stations with soap and water, availability of toilet paper, and proper waste disposal, are essential for maintaining a sanitary environment (Coswosk, et al., 2019).

The findings from Table 6 suggest that karenderyas in Poblacion Cateel consistently demonstrate their commitment to food safety and sanitation by providing toilets with clean and adequate facilities. By doing so, they prioritize the well-being of their customers and contribute to the prevention of foodborne illnesses. It is important to note that maintaining cleanliness and proper sanitation extends beyond toilet facilities and encompasses other aspects such as proper food handling practices, regular cleaning routines, and employee hygiene training.

In conclusion, the data indicates that karenderyas in Poblacion Cateel excel in providing clean and well-equipped toilet facilities, demonstrating their commitment to food safety and sanitation. This aligns with related literature emphasizing the importance of proper sanitation facilities in ensuring hygienic practices and preventing the spread of contaminants. However, it is crucial to maintain comprehensive practices throughout the entire food establishment to ensure overall food safety.

Hand Washing Facilities. The data presented in Table 7 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is very high in terms of the provision and maintenance of handwashing facilities, specifically hand wash basins. The data shows that both the provision of handwashing facilities and the maintenance of wash hand basins are consistently prioritized and well-manifested by these establishments.

Table 7. Level of food safety and sanitation practices on hand washing facilities

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
D.1. Wash-hand basin				
Wash- hand basins is installed in convenient places.	.647	4.55	Very high	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is Highly manifested.
Wash-hand basins is as near as practicable to where the person for whose use they are provided are working while handling food for sale or in such locations as may be otherwise prescribed in any particular case.	.602	4.38	Very high	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
An additional wash-hand basin is installed as near as practicable to the toilet facilities	.756	4.20	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.51597	4.38	Very High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
D.2. Wash-hand basin maintenance				
The wash-hand basin and all hand washing facilities is, at all times, be maintained in good repair and a clean condition	.790	4.22	Very High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
All wash-hand basins in the food establishment is, at all times, while the premises are being used, supplied with hot and cold or tempered running water.	1.055	4.10	High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is often manifested.
There is a supply of soap and clean	.702	4.42	Very High	the food safety and

towels for hand drying.				sanitation practices among karenderyas in Poblacion, Cateel is always manifested.
Grand Mean	.5824726	4.25	Very High	the food safety and sanitation practices among karenderyas in Poblacion, Cateel is always manifested.

The results emphasizes the critical role of hand hygiene in food safety and sanitation. Proper handwashing is a fundamental practice in preventing the spread of pathogens and reducing the risk of foodborne illnesses (Grout & Speakman, 2020). Handwashing facilities, such as hand wash basins, play a crucial role in promoting and facilitating effective hand hygiene practices (Reeves, Priest, & Poore, 2012).

The high ratings for both the provision and maintenance of handwashing facilities in Table 7 indicate that karenderyas in Poblacion Cateel recognize the importance of providing adequate and well-maintained hand wash basins. Clean and functional handwashing facilities promote proper hand hygiene practices among food handlers, reducing the likelihood of cross-contamination and improving overall food safety (Parry-Hanson Kunadu, et al., 2016).

The findings from Table 7 suggest that karenderyas in Poblacion Cateel consistently prioritize and maintain proper handwashing facilities. By doing so, they demonstrate their commitment to food safety and sanitation, promoting hygienic practices among their staff and contributing to the prevention of foodborne illnesses.

In conclusion, the data indicates that karenderyas in Poblacion Cateel excel in the provision and maintenance of handwashing facilities, specifically hand wash basins. This aligns with related literature emphasizing the importance of hand hygiene in ensuring food safety. However, it is important to remember that comprehensive practices, including proper food handling techniques, regular handwashing, and employee hygiene training, are essential for maintaining overall food safety in karenderyas.

Water Supply. The data presented in Table 8 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is very high in terms of the provision of water supply and high in terms of treating the water supply. This suggests that these establishments consistently prioritize the provision of water supply, while the treatment of water supply is frequently practiced.

Table 8. Level of food safety and sanitation practices on water supply

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
E.1. Water supply				
There is a sufficient quantity of drinking water (also known as potable water) available for use in food processing.	.744	4.24	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Water that is suitable for human use, including drinking, cooking, and food preparation, is that it is free of bacteria and other pollutants that could be dangerous to the health of the general public.	.724	4.08	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
The water supply is adequate and suitable for human use, regardless of whether it comes from a public or private water supply system.	.653	4.32	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Grand Mean	.550242	4.21	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.

E.2. Water treatment				
The water source, adhere to the Philippine National Standards for Drinking Water.	.738	4.16	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
The water sources has received a Certificate of Potability of Drinking Water issued by the local health officer, at the recommendation of the local sanitary engineer.	.729	4.14	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Per individual, a daily minimum of forty (40) liters is maintained.	.872	4.12	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
The sites where food is produced, processed, or handled must have access to hot and cold running water with enough pressure, as well as areas where food equipment and utensils are washed.	.748	4.18	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
If drinking water is not delivered to the food facility via a piped water supply system, it is handled, moved, and dispensed in a sanitary manner.	.904	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
It is kept in a different tank, reservoir, or container as long as it gets the local health inspector's approval.	.857	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.589015	4.10	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Related literature highlights the significance of safe water supply in food establishments to ensure food safety and prevent contamination. Adequate and safe water supply is essential for various food preparation and sanitation activities (Barbera & Gurnari, 2018). Treating water supply, such as through filtration or disinfection methods, is crucial to minimize the risk of waterborne pathogens and ensure the safety of the water used in food handling processes.

The high rating for the provision of water supply in Table 8 indicates that karenderyas in Poblacion Cateel recognize the importance of having access to clean and reliable water for food preparation, cleaning, and hand hygiene. This aligns with related literature emphasizing the necessity of adequate water supply in maintaining food safety standards (Green et al., 2006).

Furthermore, the high rating for treating the water supply suggests that while it is not consistently practiced, karenderyas in Poblacion Cateel still prioritize the treatment of water to some extent. Treating water supply helps eliminate harmful microorganisms and potential contaminants, reducing the risk of water-related illnesses (Akpore, Ohiobor, & Olaolu, 2014). It is important to note that consistent and proper water treatment practices are crucial for ensuring ongoing food safety.

In conclusion, the data from Table 8 suggests that karenderyas in Poblacion Cateel place a strong emphasis on the provision of water supply and demonstrate a considerable focus on treating the water supply. This aligns with related literature emphasizing the significance of safe water supply in food establishments. However, it is important

to continuously prioritize and maintain consistent water treatment practices to ensure ongoing food safety and prevent waterborne illnesses.

Solid and Liquid Waste Management. The data presented in Table 9 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of solid waste management, with a mean score of 4.14. Additionally, the mean score of 4.10 for liquid waste management suggests that these establishments also demonstrate a strong focus on managing liquid waste appropriately.

Table 9. Level of food safety and sanitation practices on solid and liquid waste management

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
F.1. Solid waste management				
Only immediate use of refuse cans is permitted in locations where food is prepared.	.667	4.38	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Refuse cans should be stored both full and empty in a dedicated area away from food handling activities	.596	4.18	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
The containers must be made and kept in a way that makes them pest- and odor-proof and simple to maintain.	.792	4.16	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Scrubbing brushes, cleaning agents, steam or hot water under pressure, and a hose with an adjustable nozzle must all be present in this area.	.845	3.98	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Solid wastes and inedible materials shall be placed in designated area until these are collected or removed from the premises.	.881	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.5559	4.14	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
F.2. Liquid waste management				
Waste disposal facilities is designed to prevent access by pests and possible contamination of food, potable water, food-contact surfaces, processing and storage areas, and building premises.	.799	4.12	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Floors and drainage canals shall allow adequate draining, with no stagnant water.	.820	4.02	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Taps that are non-hand operated.	.922	4.08	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Waste disposal facilities is furnished with properly trapped wastewater pipes leading to drains.	.766	4.16	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.62859	4.10	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Related literature underscores the importance of effective waste management in maintaining food safety and sanitation. Proper solid waste management helps prevent the proliferation of pests, minimize odors, and reduce the risk of contamination (Shankar & Shikha, 2017). Similarly, appropriate management of liquid waste, including wastewater, ensures that potential contaminants do not enter the food preparation and serving areas, protecting the health and safety of both customers and food handlers (Makun, 2016).

The high mean score of 4.14 for solid waste management in Table 9 indicates that karenderyas in Poblacion Cateel consistently prioritize and manifest good practices in managing solid waste. They likely employ appropriate waste segregation, use proper waste containers, and have established regular waste disposal routines. These practices align with the emphasis on proper waste management in maintaining a clean and hygienic food establishment, as highlighted in literature (Sharma et al., 2020).

Additionally, the mean score of 4.10 for liquid waste management suggests that karenderyas in Poblacion Cateel pay attention to the proper disposal and management of liquid waste. This may involve the use of grease traps, proper drainage systems, and adherence to local regulations regarding wastewater management. Effective liquid waste management is crucial for preventing environmental contamination and ensuring the overall cleanliness and safety of the food establishment (Datta, Mohi, & Chander, 2018).

In conclusion, the data from Table 9 indicates that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of both solid waste management and liquid waste management. These findings align with related literature emphasizing the importance of proper waste management in maintaining food safety standards. It is important to continue implementing consistent waste management practices to prevent the accumulation of waste, minimize the risk of contamination, and promote a clean and healthy environment in karenderyas.

Wholesomeness of Food. The data presented in Table 10 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is very high for the wholesomeness of food in terms of dry storing non-perishable goods. On the other hand, the level is rated high for refrigerating storage of perishable goods. This suggests that karenderyas consistently prioritize and demonstrate excellent practices in maintaining the wholesomeness of non-perishable goods stored in dry conditions, while the practices related to refrigerating perishable goods are frequently observed.

Table 10. Level of food safety and sanitation practices on wholesomeness of food

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
G.1. Dry storage of non-perishable food				
Never use fingers to serve butter, ice, or other comparable foods.	.725	4.38	Very high	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Sugar is served in sealed dispensers or containers, or in single-use packaging.	.756	4.20	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Food handlers avoid touching food or beverages with their hands.	.707	4.48	Very high	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always

				manifested.
It is prohibited to handle the surfaces of glasses and plates as well as any containers and utensils that come into contact with food or drink.	.868	4.32	Very high	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Disposable plates, cups, spoons, and other single-use utensils must be bought in sanitary cartons and stored in a clean, dry area until they are needed	.729	4.14	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Care is to prevent contacting any surface that will come into contact with food or drink when handling or removing these goods from the box.	.710	4.16	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Clothes, napkins, spoons, towels, and other cloth things is stored in clean areas designated exclusively for them.	.670	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Towels, aprons, and clothing that have become soiled is kept in a locked, specially labeled bin or locker.	.742	3.98	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.489436	4.21	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
G.2. Refrigerated storage of perishable food				
When serving frozen desserts, infrequently used spoons, spatulas, dippers, and scoops must be kept in running water or kept at 77°C (170°F) and frequently replaced, or they can be cleaned and stored in a dry place after each use.	1.037	3.84	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Constant-temperature bottles and other containers used for potable water and other beverages is maintained clean and treated before and after use with an effective bactericidal solution.	1.143	3.80	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	1.0190	3.82	High	The Food Safety and Sanitation Practices among

				Karenderyas in Poblacion, Cateel is often manifested.
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The very high rating for the wholesomeness of food in terms of dry storing non-perishable goods in Table 10 suggests that karenderyas in Poblacion Cateel consistently adhere to best practices for storing non-perishable goods. They likely employ proper storage techniques, such as using sealed containers, labeling, and organizing items to prevent cross-contamination. These practices align with the emphasis on maintaining the quality and safety of non-perishable goods in food establishments (Subashini & Hemavati, 2022).

Related literature emphasizes the significance of proper food storage to ensure food safety and prevent the growth of harmful bacteria and spoilage. Dry storage of non-perishable goods, such as canned foods and dry ingredients, requires appropriate conditions to maintain their quality, including protection from moisture, pests, and temperature fluctuations (FAO, 2022). Properly stored non-perishable goods reduce the risk of contamination and maintain their freshness and safety over an extended period.

Moreover, the high rating for refrigerating storage of perishable goods indicates that it is often manifested, karenderyas in Poblacion Cateel still prioritize the proper storage of perishable items that require refrigeration. Perishable goods, such as meats, dairy products, and cut fruits, are prone to spoilage and bacterial growth if not stored at appropriate temperatures (Boyer & McKinney, 2018). Proper refrigeration helps maintain the freshness, quality, and safety of these items.

In conclusion, the data from Table 10 suggests that karenderyas in Poblacion Cateel consistently prioritize the wholesomeness of non-perishable goods stored in dry conditions. This aligns with related literature emphasizing the importance of proper dry storage practices. While the rating for refrigerating storage of perishable goods is high but not always manifested, it still indicates a significant focus on maintaining the quality and safety of perishable items. It is crucial to consistently adhere to proper refrigeration practices to minimize the risk of spoilage and foodborne illnesses. Overall, proper food storage practices contribute to ensuring food safety and protecting the health of consumers.

Protection of Foods. The data presented in Table 11 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is highly manifested in terms of the protection of foods by competent handlers, with a mean score of 4.10. Additionally, the mean score of 3.87 for proper handling suggests that these establishments also demonstrate a considerable focus on proper food handling practices.

Table 11. Level of food safety and sanitation practices on protection of foods

Indicators	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
H.1. Food handlers				
The employees wear an apron or uniform while serving.	.814	4.30	Very high	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Packaging design of materials is provided with adequate protection to prevent damage.	.915	3.98	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
All employees who come into touch with food directly, food contact surfaces are adhere to hygiene procedures to ensure the food's safety.	.918	4.12	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Food handlers remove all contaminating objects such as jewelry, watches, etc. From the	1.125	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often

area where exposed utensils are being cleaned.				manifested.
5. Handlers must refrain from eating, chewing, sneezing, and using tobacco or other nicotine products when cleaning equipment and utensils.	.689	4.1 2	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.7001	4.10	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
H.2. Food Handling				
Meats, meat products and fish is procured from sources under sanitary or veterinary supervision. These products must be transported by the supplier to the establishment in a sanitary and safe manner.	1.088	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Milk and fluid products is obtained from sources approved by the local health authority.	1.023	3.88	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Milk obtained from other sources must be sterilized, pasteurized or otherwise heated.	1.168	3.94	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
All imported products packaging labels wherein the information are declared in a foreign language always carry the corresponding English translation. (A.O. 2014- 0030, Department of Health)	1.274	3.64	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.81160	3.87	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Related literature emphasizes the crucial role of competent food handlers in maintaining food safety. Competent handlers possess the necessary knowledge, skills, and behaviors to handle food safely, reducing the risk of contamination and foodborne illnesses (Jenie et al., 2016). Proper handling practices, such as using appropriate utensils, following hygiene protocols, and avoiding cross-contamination, are essential for ensuring the safety and quality of the food being prepared and served (Garayoa et al., 2017).

The high mean score of 4.10 for the protection of foods by competent handlers in Table 11 indicates that karenderyas in Poblacion Cateel consistently prioritize and manifest good practices in this area. They likely employ competent and trained food handlers who adhere to food safety guidelines, including personal hygiene practices, wearing protective gear, and practicing safe food handling techniques. These practices align with the importance of competent food handlers in minimizing the risk of foodborne diseases (Gaungoo & Jeewon, 2013).

Furthermore, the mean score of 3.87 for proper handling suggests that while it may not be as consistently manifested as the protection of foods by competent handlers, karenderyas in Poblacion Cateel still place importance on proper food handling practices. Proper handling practices involve procedures such as correct temperature control, avoiding cross-contamination, and proper storage of ingredients. Adhering to these practices helps maintain food safety and prevent the growth of harmful bacteria (Bader & Jagtap, 2020).

In conclusion, the data from Table 11 suggests that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of the protection of foods by competent handlers. This aligns with related literature emphasizing the importance of competent food handlers in maintaining food safety. Although the rating for proper handling is slightly lower, it still indicates a significant focus on implementing proper food handling practices. It is crucial to continuously educate and train food handlers to ensure ongoing adherence to safe food handling procedures and further enhance food safety in karenderyas.

Vermin Control. The data presented in Table 12 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of vermin control. The mean score of 4.00 suggests that these establishments consistently prioritize and manifest good practices in controlling pets, pests, insects, birds, vermin, and rodents.

Table 12. Level of food safety and sanitation practices on vermin control

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
I.1. Controlling pets, insects, birds, vermin and rodents				
Animals (including pets) shall not be allowed in any area of a food processing facility.	1.124	4.04	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Measures is taken to exclude pests and their breeding places from the processing areas and to protect food against the contamination by animals, birds, vermin, rodents and insects.	.976	3.84	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Buildings is kept in good repair and condition to prevent pest access	.856	4.04	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Holes, drains and other places where pests are likely to gain access is kept sealed	.947	4.04	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Wire screens may be installed on windows, doors and ventilators to prevent entry of pests.	.872	3.88	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Ingredients, raw materials, and packing materials that could serve as pest food sources must be kept in pest-proof containers or stacked above the ground and away from walls	1.069	3.86	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Product spills is cleaned up right once to prevent insect attraction.	1.104	3.92	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Cleanliness is maintained both	.843	4.06	High	The Food Safety and

inside and outside of food establishments.				Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Refuse is kept in enclosed, pest-proof containers when appropriate	.773	4.12	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Regular inspections of the establishment and its surroundings are necessary to look for signs of infestation.	.853	4.08	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is Always manifested.
To prevent contamination and maintain the safety and acceptability of food, pests are eliminated using only the most careful methods, in accordance with supplier instructions	1.009	4.04	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Periodically check the effectiveness of pest control and eradication measures.	.849	4.12	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.61074	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Vermin control is essential in ensuring food safety and preventing contamination. Pets, pests, insects, birds, and rodents can carry diseases and pathogens that can contaminate food and pose health risks to consumers (Tirado, et al., 2010). Proper vermin control measures, such as implementing pest management programs, maintaining cleanliness, sealing entry points, and storing food properly, are crucial for preventing infestations and safeguarding food hygiene (Garg, et al., 2021).

The high mean score of 4.00 for vermin control in Table 12 suggests that karenderyas in Poblacion Cateel consistently adopt effective measures to control and prevent vermin infestations. They likely implement regular pest control practices, such as using traps, employing professional exterminators if necessary, and maintaining a clean and hygienic environment that discourages vermin activity. These practices align with the importance of vermin control in preventing food contamination and upholding food safety standards (Farooq, et al., 2021).

In conclusion, the data from Table 12 indicates that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of vermin control. This aligns with related literature emphasizing the significance of effective vermin control measures in maintaining food safety. By consistently implementing strategies to control and prevent pests, insects, rodents, and other vermin, karenderyas in Poblacion Cateel ensure the cleanliness and hygiene of their premises, thus reducing the risk of food contamination and protecting the health of consumers. It is essential for these establishments to continue practicing robust vermin control measures and remain vigilant in order to sustain a safe and hygienic food environment.

Cleanliness and Tidiness. The data presented in Table 13 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of cleanliness and tidiness of the area. The mean score of 4.28 for cleanliness and 4.06 for tidiness suggests that these establishments consistently prioritize and manifest good practices in maintaining a clean and tidy environment. Table 15 shows the result of the T-test, ANOVA, and Post hoc test on the Level of Personal Financial Literacy among freshmen students.

Table 13. Level of food safety and sanitation practices on cleanliness and tidiness

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
J.1. Maintenance of clean condition				
Every room and place in the establishment is in clean condition such as yard and passageways.	.800	4.18	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.800	4.18	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
J.2. Maintenance of Tidy Condition				
The premises is in tidy condition and is free of accumulation of boxes.	.843	4.06	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is Always manifested.
Grand Mean	.843	4.06	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Cleanliness and tidiness play a crucial role in ensuring food safety and hygiene. A clean environment helps prevent the accumulation of dirt, dust, and debris, which can harbor bacteria and contaminants (Nordhagen, et al., 2021). Tidiness involves organizing and properly storing utensils, equipment, and ingredients, reducing clutter and potential sources of contamination (Marriott & Gravani, 2006).

The high mean scores of 4.28 for cleanliness and 4.06 for tidiness in Table 13 indicate that karenderyas in Poblacion Cateel consistently adhere to practices that promote a clean and tidy environment. They likely implement regular cleaning schedules, use appropriate cleaning agents, and maintain cleanliness in food preparation areas, dining areas, and storage spaces. These practices align with the importance of cleanliness and tidiness in preventing the growth of harmful bacteria and maintaining food safety standards (Owusu-Apenten, & Vieira, 2023).

In conclusion, the data from Table 13 suggests that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of cleanliness and tidiness of the area. This aligns with related literature emphasizing the significance of maintaining a clean and tidy food environment. By consistently practicing good hygiene, karenderyas in Poblacion Cateel create a safer and more hygienic space for food preparation and service, reducing the risk of foodborne illnesses and ensuring the well-being of consumers. It is important for these establishments to continue prioritizing cleanliness and tidiness, implementing regular cleaning routines, and fostering a culture of cleanliness among their staff.

Personal Cleanliness. The data presented in Table 14 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of personal cleanliness. The mean score of 3.96 suggests that these establishments consistently prioritize and manifest good practices in maintaining personal hygiene.

Table 14. level of food safety and sanitation practices on personal cleanliness

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
Good hygiene practices				
Wear hairnet and keep the head covered	.856	3.96	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Grand Mean	.856	3.96	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
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Personal cleanliness is crucial for ensuring food safety and preventing contamination. Food handlers with good personal hygiene practices minimize the risk of transferring harmful bacteria or pathogens to the food they handle (Abdullah Sani & Siow, 2014). Proper handwashing, wearing clean uniforms or aprons, and maintaining overall cleanliness are essential components of personal cleanliness in a food service setting (Tan et al., 2013). The high mean score of 3.96 for personal cleanliness in Table 14 indicates that karenderyas in Poblacion Cateel place importance on maintaining good personal hygiene practices. They likely educate and train their staff on proper hygiene protocols, emphasize the importance of handwashing, and enforce the use of clean uniforms or protective clothing. These practices align with the significance of personal cleanliness in preventing the transmission of foodborne illnesses (Ghezzi & Ayoun, 2013).

In conclusion, the data from Table 14 suggests that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of personal cleanliness. This aligns with related literature emphasizing the importance of personal hygiene in maintaining food safety. By consistently practicing good personal cleanliness, karenderyas in Poblacion Cateel minimize the risk of food contamination, promote a safe food environment, and protect the health of consumers. It is crucial for these establishments to continue emphasizing and monitoring personal hygiene practices among their staff to ensure ongoing adherence to proper hygiene protocols.

Housekeeping and Management. The data presented in Table 15 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of housekeeping and management. The data shows that karenderyas demonstrate a high level of conformity of the premises and adequate supervision of staff and customers.

Table 15. Level of food safety and sanitation practices on housekeeping and management

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
L.1. Conformity of Premises				
Premises cleaned and refuse removed from premises at sufficient and regular interval, free of liters	.915	3.98	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.915	3.98	High	
L.2. Adequate supervision of staff and customers				
There is adequate supervision of staff and customers to prevent breach of sanitation requirements.	.857	4.20	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Domesticated animals like dogs, cats and birds are not permitted to enter or to be in or upon the premises	.818	4.06	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
All appliances, chairs, benches table, trolleys and other furniture which come into direct contact with moist or readily perishable foods are scrubbed with hot water and	.896	3.82	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

detergent daily.				
All shelves and cupboards in which food or appliances are stored kept clean and free of rubbish	.774	4.18	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Laundered clothes and/or napkins are stored in clean place	.881	4.20	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Soiled lines and clothing stored in proper containers	.944	4.26	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Grand Mean	.628174	4.12	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Housekeeping and management practices are essential for maintaining food safety and sanitation in food establishments. Conformity of the premises involves ensuring that the physical environment and facilities comply with hygiene standards and regulations (Panghal et al., 2018). Adequate supervision of staff and customers involves effective management and oversight to ensure that proper food handling and hygiene practices are followed (Arendt, Paez & Strohbehn, 2013).

The high scores in Table 15 for conformity of the premises and adequate supervision of staff and customers indicate that karenderyas in Poblacion Cateel prioritize and manifest good housekeeping and management practices. They likely implement regular inspections and maintenance of their premises to ensure compliance with food safety standards. Moreover, they likely provide adequate training and supervision to their staff, emphasizing the importance of proper hygiene, food handling practices, and customer safety.

These practices align with the significance of housekeeping and management in ensuring a safe and hygienic food environment (Gordon, 2017). By maintaining a clean and well-managed premises and effectively supervising staff and customers, karenderyas in Poblacion Cateel reduce the risk of food contamination and create a safer space for food preparation and service.

In conclusion, the data from Table 15 suggests that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of housekeeping and management. This aligns with related literature emphasizing the importance of conforming to hygiene standards and implementing effective supervision in food establishments. By consistently practicing good housekeeping and management, karenderyas in Poblacion Cateel contribute to maintaining a safe and sanitary food environment, thereby protecting the health of consumers. It is crucial for these establishments to continue prioritizing housekeeping and effective management practices, conducting regular inspections, and providing ongoing training and supervision to their staff.

Condition of Appliance and Utensils. The data presented in Table 16 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of conditioning appliances and utensils. The mean score of 4.08 suggests that these establishments consistently prioritize and manifest good practices in controlling, designing, and maintaining their appliances and utensils.

Table 16. Level of food safety and sanitation practices on condition of appliance and utensils

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
M.1. Control, design and maintenance				
Food contact surfaces of equipment, utensils and non-food-contact	.782	4.20	High	The Food Safety and Sanitation Practices among

surfaces of equipment are in good repair, and no cracks				Karenderyas in Poblacion, Cateel is often manifested.
Food contact surfaces of equipment, utensils and non-food-contact surfaces of equipment are no chips, pits or open seams.	.877	4.08	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Food contact surfaces of equipment, utensils and non-food-contact surfaces of equipment are cleanable, smooth, approved material and no corrosion	.689	3.88	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Food contact surfaces of equipment, utensils and non-food-contact surfaces of equipment are in proper construction	.728	4.20	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Food contact surfaces of equipment, utensils and non-food-contact surfaces of equipment are accessible for cleaning and inspection.	.808	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Single-service articles/wrapping materials/packaging are made of non-toxic materials.	.853	4.08	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Equipment are properly installed	.940	4.12	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Existing equipment capable of being installed, are in good repair.	.998	4.06	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.578026	4.08	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Proper conditioning of appliances and utensils is critical for ensuring food safety and preventing cross-contamination. Controlling the use of appliances and utensils involves implementing measures to prevent the spread of bacteria or contaminants (Saiman, Siegel, & Cystic Fibrosis Foundation, 2003). Designing and maintaining appliances and utensils in a way that facilitates effective cleaning and sanitation is also essential (Chassin & Loeb, 2013).

The high mean score of 4.08 for conditioning appliances and utensils in Table 16 indicates that karenderyas in Poblacion Cateel place importance on maintaining proper hygiene and sanitation of their equipment. They likely have protocols in place for regular cleaning, sanitization, and maintenance of appliances and utensils. Additionally, they may have implemented design features that allow for easy cleaning and minimize the risk of contamination.

These practices align with the significance of conditioning appliances and utensils in preventing the transmission of foodborne illnesses and maintaining food safety standards (Powell, Jacob, & Chapman, 2011). By consistently practicing good conditioning, karenderyas in Poblacion Cateel reduce the risk of cross-contamination and ensure the cleanliness and safety of their food preparation and serving equipment.

In conclusion, the data from Table 16 suggests that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of conditioning appliances and utensils. This aligns with related literature emphasizing the importance of controlling, designing, and maintaining equipment to prevent cross-contamination. By consistently practicing good conditioning, karenderyas in Poblacion Cateel contribute to maintaining a safe and hygienic food environment, ensuring the well-being of their customers. It is crucial for these establishments to continue prioritizing the conditioning of appliances and utensils, implementing regular cleaning and maintenance routines, and promoting proper hygiene practices among their staff.

Sanitary Condition of Appliances and Utensils. The data presented in Table 17 indicates that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of the sanitary condition of appliances and utensils. The data shows that karenderyas prioritize and manifest good practices in food service sanitation as well as equipment and utensil sanitation.

Table 17. Level of food safety and sanitation practices on sanitary condition of appliances and utensils

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
N.1. Food service sanitation				
The utensils are sanitized and visible to the customers.	.915	3.98	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Cups, bowls and glasses is inverted in storage.	.833	4.00	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Labeling cleaning and sanitizing chemicals is on safer place away from foods.	.773	4.12	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
The food containers are covered properly.	.840	4.22	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Grand Mean	.70970	4.08	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
N.2. Equipment and utensil sanitation				
The equipment and utensils must be designed and put in place that makes them easy to clean and safe.	.647	4.30	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Use of lead-soldered containers, cadmium-lined piping, and fixtures is prohibited.	.756	4.14	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Surfaces that come into contact with food or beverages has a construction material that are easy to clean.	.909	4.10	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Sliding cabinet door removable and easy to clean.	.825	4.18	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

There are allocations of runners to enable for the removal of dust and debris.	.833	4.20	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
The bottom shelves of open-based fixtures is removable for examination, maintenance, and cleaning	.717	4.34	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Grand Mean	.553089	4.21	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.

Maintaining a sanitary condition of appliances and utensils is crucial for ensuring food safety and preventing the spread of contaminants and pathogens. Food aservice sanitation involves implementing measures to maintain cleanliness and hygiene throughout the food preparation and service process (Lelieveld, Holah, & Gabric, 2016). Equipment and utensil sanitation focuses on the proper cleaning and sanitization of tools used in food handling and preparation (Bader & Jagtap, 2020).

The high scores in Table 17 for both food service sanitation and equipment and utensil sanitation indicate that karenderyas in Poblacion Cateel are committed to maintaining a sanitary environment for food preparation and service. They likely follow strict protocols for cleaning, sanitizing, and maintaining the cleanliness of their appliances and utensils. This includes proper washing, rinsing, and sanitizing procedures to eliminate any potential contaminants.

These practices align with the importance of maintaining sanitary conditions in food establishments to prevent foodborne illnesses and ensure the safety of consumers (Doyle et al., 2014). By consistently practicing good sanitation measures, karenderyas in Poblacion Cateel minimize the risk of contamination and maintain a hygienic environment for food handling and preparation.

In conclusion, the data from Table 17 suggests that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of the sanitary condition of appliances and utensils. This aligns with related literature emphasizing the significance of food service sanitation and equipment and utensil sanitation in ensuring food safety. By consistently practicing good sanitation practices, karenderyas in Poblacion Cateel contribute to maintaining a safe and hygienic food environment, protecting the health of their customers. It is essential for these establishments to continue prioritizing and enforcing proper sanitation protocols, including regular cleaning, sanitization, and maintenance of appliances and utensils, to uphold food safety standards.

Disease Control. The data presented in Table 18 suggests that the level of food safety and sanitation practices among karenderyas (small local food stalls) in Poblacion Cateel is high in terms of disease control. The data indicates that karenderyas prioritize and manifest good practices in restricting food handlers with diseases to report and securing health certificates for the food handlers.

Table 18. Level of food safety and sanitation practices on disease control

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
O.1. Food handlers				
Persons with boil are restricted.	.767	4.06	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Persons with infectious wounds and diseases are restricted.	.892	3.98	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Persons with respiratory diseases and other communicable diseases are restricted to handle food or in the premises.	.825	4.18	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.68110	4.07	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
O.2. Health certificate				

All food handlers must have an up-to-date health certificate.	.947	4.04	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
All food handlers with up-to-date health certificate clipped on the upper left front of the garment.	.781	4.04	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Grand Mean	.7944	4.04	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

Disease control is a critical aspect of ensuring food safety and preventing the transmission of illnesses through food handling and preparation. Restricting food handlers with diseases to report involves implementing measures to identify and manage individuals who may pose a risk to food safety due to their health condition (Mitchell, Fraser, & Bearon, 2007). Securing health certificates for food handlers involves ensuring that individuals involved in food handling have undergone medical examinations and are deemed fit to handle food (Merrill & Francer, 2000).

The high scores in Table 18 for both restricting food handlers with disease to report and securing health certificates of the food handlers indicate that karenderyas in Poblacion Cateel place importance on disease control measures. By implementing policies that require sick food handlers to report their illnesses and ensuring that all food handlers have valid health certificates, they contribute to preventing the spread of diseases through food. These practices align with the importance of disease control in the food industry to protect public health. It is essential to prevent food handlers with contagious illnesses from handling food to avoid transmitting pathogens to consumers (Medeiros, et. al., 2001). Requiring health certificates for food handlers helps ensure that individuals are free from infectious diseases that may pose a risk to food safety (Gaungoo & Jeewon, 2013).

In conclusion, the data from Table 18 indicates that karenderyas in Poblacion Cateel demonstrate a high level of food safety and sanitation practices in terms of disease control. This aligns with related literature emphasizing the significance of restricting food handlers with diseases to report and securing health certificates for food handlers. By implementing these measures, karenderyas in Poblacion Cateel minimize the risk of disease transmission through food handling and preparation, safeguarding the health of their customers. It is crucial for these establishments to continue enforcing policies that promote disease control and regularly monitor the health status of their food handlers to maintain a safe and hygienic food environment.

Miscellaneous. The data presented in Table 19 suggests that the level of food safety and sanitation practices among karenderyas in Poblacion Cateel is high in terms of displaying their sanitary permit and very high in terms of displaying their standard sanitary rating.

Table 19. Level of food safety and sanitation practices on miscellaneous

Indicator	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
P.1. Sanitary permit display				
Using utensils during packing, preparing or serving.	.870	4.24	Very high	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Not Serving unwrapped sweets or any sticky substances with fingers.	.763	4.10	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Not Serving ham, cheese, cooked meat or fish, baker's small goods, pastry, or similar food with fingers.	1.229	3.80	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Customers not allowed to handle food on display.	1.240	3.82	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

No bagging of any bag or wrapper.	1.200	3.78	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
No sticker or label or other article which is not clean.	.995	3.90	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Protection of food for sale or in the manufacture, preparation, storage, packing or delivery from rain, dust, vermin and etc.	.771	4.24	Very high	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Grand Mean	.73278 66	3.98	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
P.2. Sanitary standard rating display				
Sanitary permit are displayed in a conspicuous place.	.817	4.16	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Sanitation standard rating sticker attached/displayed at the door or in a conspicuous part of the establishment.	.766	4.16	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.
Inspection record, in-house inspection and other necessary documents are available during inspection.	.675	4.44	Very high	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.
Grand Mean	.581498 6	4.25	Very High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is always manifested.

Displaying the sanitary permit and standard sanitary rating is crucial for ensuring transparency and building trust with customers (Okpala & Korzeniowska, 2023). The sanitary permit serves as proof that the karenderya has met the required standards and regulations set by the local health authorities. It indicates that the establishment has undergone inspections and has been deemed compliant with the necessary hygiene and sanitation practices (Llanto, 2015).

The high score in Table 19 for displaying the sanitary permit suggests that karenderyas in Poblacion Cateel actively comply with the requirement to visibly exhibit their permit. This demonstrates their commitment to transparency and adherence to regulatory guidelines.

Furthermore, the very high score for displaying the standard sanitary rating indicates that karenderyas in Poblacion Cateel go above and beyond by prominently showcasing their sanitation rating. The standard sanitary rating is typically assigned by health authorities based on the karenderya's compliance with food safety and sanitation standards. Displaying a high rating indicates that the establishment has consistently maintained good hygiene practices and ensures a safe environment for food preparation and service (Sun & Ockerman, 2005).

By displaying both the sanitary permit and standard sanitary rating, karenderyas in Poblacion Cateel provide visual evidence to customers that they are operating in accordance with food safety regulations. This transparency allows customers to make informed decisions about where to dine and instills confidence in the karenderyas' commitment to maintaining high levels of cleanliness and hygiene.

In conclusion, the data from Table 19 suggests that karenderyas in Poblacion Cateel prioritize food safety and sanitation practices by actively displaying their sanitary permit and standard sanitary rating. These practices

align with related literature highlighting the importance of visible compliance and transparency in the food service industry. By prominently showcasing their permits and ratings, karenderyas in Poblacion Cateel demonstrate their commitment to maintaining a safe and sanitary environment for food preparation and service. It is crucial for these establishments to continue adhering to regulatory requirements, ensuring that permits and ratings are up to date, and promoting transparency to build trust with their customers.

Summary. The data presented in Table 20 provides a summary of the level of food safety and sanitation practices among karenderyas in Poblacion Cateel. The overall mean score of 4.09 suggests that the food safety and sanitation practices in these establishments are consistently manifested.

Table 20. Summary

Indicators	Standard Deviation	Mean	Descriptive Interpretation	Verbal Interpretation
Level of Food Safety and Sanitation Practices of Karenderyas	.43279	4.09	High	The Food Safety and Sanitation Practices among Karenderyas in Poblacion, Cateel is often manifested.

This result aligns with previous studies that emphasize the importance of food safety and sanitation practices in ensuring public health and reducing the risk of foodborne illnesses. According to Havelaar et. al. (2015), foodborne diseases pose a significant burden on global health, and implementing proper food safety practices is crucial for preventing such illnesses. Maintaining high standards of food safety and sanitation practices is essential for protecting consumers and promoting public health (Okocha, Olatoye, & Adedeji, 2018).

The overall mean score of 4.09 in Table 20 indicates that karenderyas in Poblacion Cateel are committed to upholding food safety and sanitation practices. This commitment is reflected in their efforts to maintain a clean and safe food preparation and service environment. By consistently manifesting food safety and sanitation practices, karenderyas aim to provide their customers with safe and hygienic food (Ungku Fatimah et al., 2011).

It is important to note that the findings in Table 20 provide a general overview of the overall mean score. To gain a comprehensive understanding, it is essential to refer to the specific data presented in the previous tables, which evaluate various aspects of food safety and sanitation practices.

In conclusion, the results from Table 20 suggest that the food safety and sanitation practices among karenderyas in Poblacion Cateel are consistently manifested. These practices contribute to protecting public health, reducing the risk of foodborne illnesses, and ensuring customer satisfaction.

Table 21. T-test Result

Factor	t-value	p-value	Statistical Inference
Sex	-.974	.068	Not significant
Role in the industry	2.250	.011	Significant

The data suggests that there is no significant difference in the level of food safety and sanitation practices among karenderyas in Poblacion Cateel when grouped according to sex. This means that both male and female karenderya owners in the area exhibit similar levels of adherence to food safety and sanitation practices. This finding aligns with previous studies that have examined the relationship between gender and food safety practices. For example, a study by Bou-Mitri et al. (2018) found no significant difference in food safety knowledge and practices between male and female food handlers. This indicates that gender alone may not be a determining factor in the level of food safety and sanitation practices (Malaysiana, 2011).

However, the data also reveals a significant difference in the level of food safety and sanitation practices among karenderyas in Poblacion Cateel when grouped according to role in the industry. This suggests that the ownership status of karenderyas, such as whether they are owned by individuals or by businesses, plays a role in the implementation of food safety and sanitation practices.

This finding is supported by research that highlights the influence of ownership status on food safety practices. For instance, a study by Bradford-Knox & Kane (2014) found that food service establishments owned by businesses demonstrated better compliance with food safety regulations compared to those owned by individuals. This could be attributed to the presence of structured management systems and resources in business-owned establishments.

In conclusion, the data indicates that there is no significant difference in the level of food safety and sanitation practices among karenderyas in Poblacion Cateel based on the sex of the owners. However, a significant difference exists when considering the role in the industry. These findings emphasize the importance of considering and implementing effective management systems to ensure consistent adherence to food safety and sanitation practices.

Table 22. Analysis of Variance (ANOVA) Result

Factor	F-value	p-value	Statistical Inference	Post Hoc Result
Age	1.883	.130	Not significant	<i>Not Applicable</i>

The data suggests that there is no significant difference in the level of food safety and sanitation practices among karenderyas in Poblacion Cateel when grouped according to age. This means that regardless of age, karenderya owners in the area exhibit similar levels of adherence to food safety and sanitation practices (Graham, 2011).

This finding aligns with previous studies that have examined the relationship between age and food safety practices. For example, a study by Ahmed, Akbar, & Sadiq, (2021) conducted in food service establishments found no significant correlation between age and food safety knowledge and practices. This indicates that age alone may not be a determining factor in the level of food safety and sanitation practices.

However, it is important to note that while the data shows no significant difference in overall food safety practices, individual differences within age groups may still exist. Factors such as experience, training, and awareness of food safety guidelines can influence an individual's practices regardless of their age.

Overall, the data suggests that age does not play a significant role in determining the level of food safety and sanitation practices among karenderyas in Poblacion Cateel. This highlights the importance of providing comprehensive food safety training and education to all karenderya owners, regardless of their age, to ensure consistent adherence to food safety standards.

5. CONCLUSION

The following conclusions were reached in light of the information found and the data gathered:

1. There were 30 workers and 20 owners of Karenderya from Barangay Poblacion, most of them were aged 41 to 50 years old; the number of females that responded were higher than males having a numerical count of 34 and 16, respectively. This indicates that most of the respondents were females.
2. The level of food safety and sanitation practices among Karenderyas in Poblacion, Cateel is high, thus showing that food safety and sanitation practices are always manifested in terms of construction of premises, maintenance of premises, toilet provision, hand washing facilities, water supply, solid and liquid waste management, wholesomeness of food, protection of food/s, vermin control, cleanliness and tidiness, personal cleanliness, housekeeping and management, condition of appliance/s and utensils, sanitary condition of appliance/s and utensils, disease control, and miscellaneous. The results revealed that Food Safety and Sanitation Practices in terms of Toilet Provision is very high, however, the indicator that got the lowest rating is Wholesomeness of Food.
3. The food safety and sanitation practices do not have a significant difference in terms of sex, age, and status of ownership among Karenderyas in Poblacion, Cateel.

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