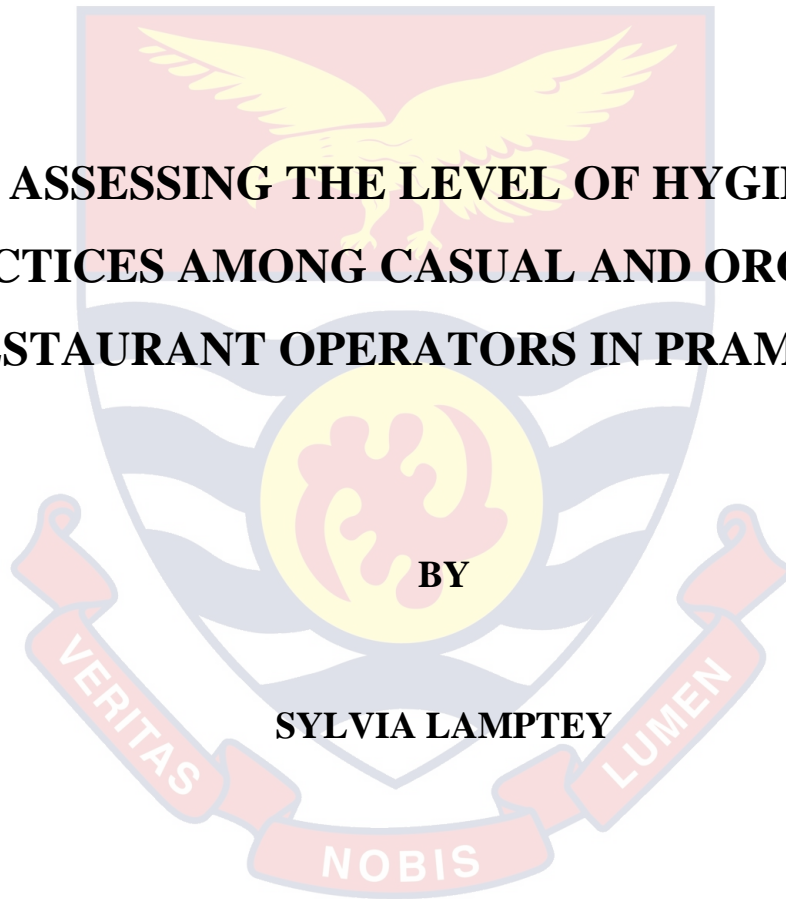


**PRESBYTHERIAN UNIVERSITY COLLEGE
FACULTY OF DEVELOPMENT STUDIES**

**DEPARTMENT OF ENVIRONMENTAL AND NATURAL
RESOURCES MANAGEMENT**

**ASSESSING THE LEVEL OF HYGIENE
PRACTICES AMONG CASUAL AND ORGANIZED
RESTAURANT OPERATORS IN PRAMPAM.**



SEPTEMBER, 2019

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RESOURCES MANAGEMENT**

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RESTAURANT OPERATORS IN PRAMPAM**

**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF
ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT OF THE
PRESBYTERIAN UNIVERSITY COLLEGE, GHANA IN PARTIAL
FULFILMENT FOR THE REQUIREMENT FOR THE AWARD OF MASTER
DEGREE IN ENVIRONMENTAL HEALTH AND SANITATION.**

**BY
SYLVIA LAMPTEY**

SEPTEMBER, 2019

DECLARATION

Candidates Declaration

I hereby declare that this project work is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

.....

Date:

LAMPTEY SYLVIA

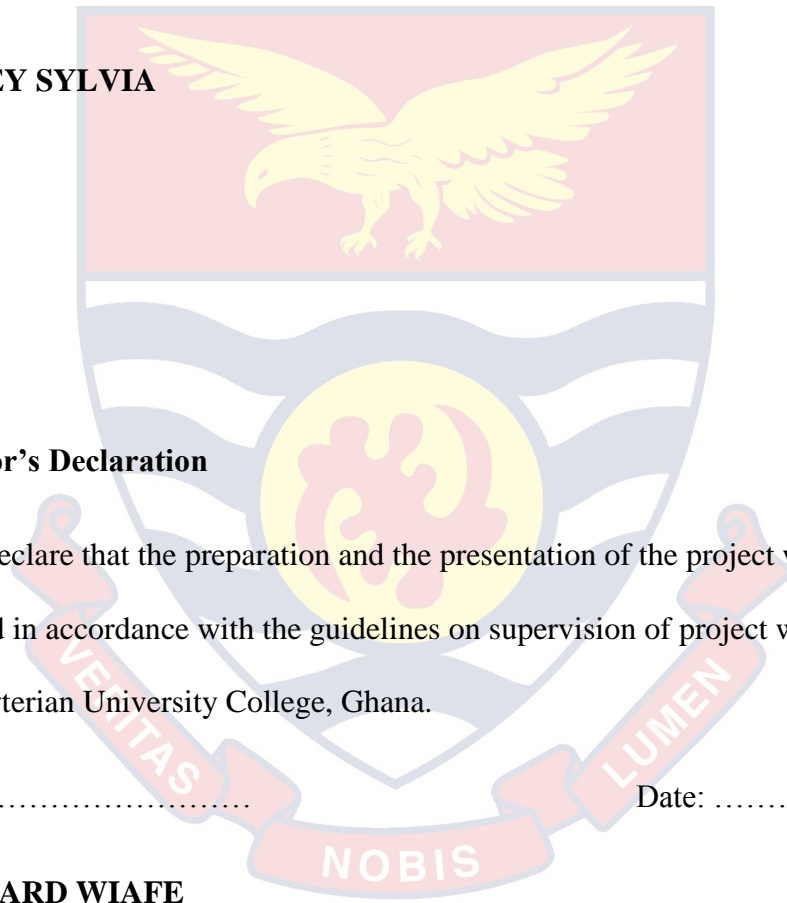
Supervisor's Declaration

I hereby declare that the preparation and the presentation of the project work were supervised in accordance with the guidelines on supervision of project work laid down by the Presbyterian University College, Ghana.

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Date:

DR EDWARD WIAFE

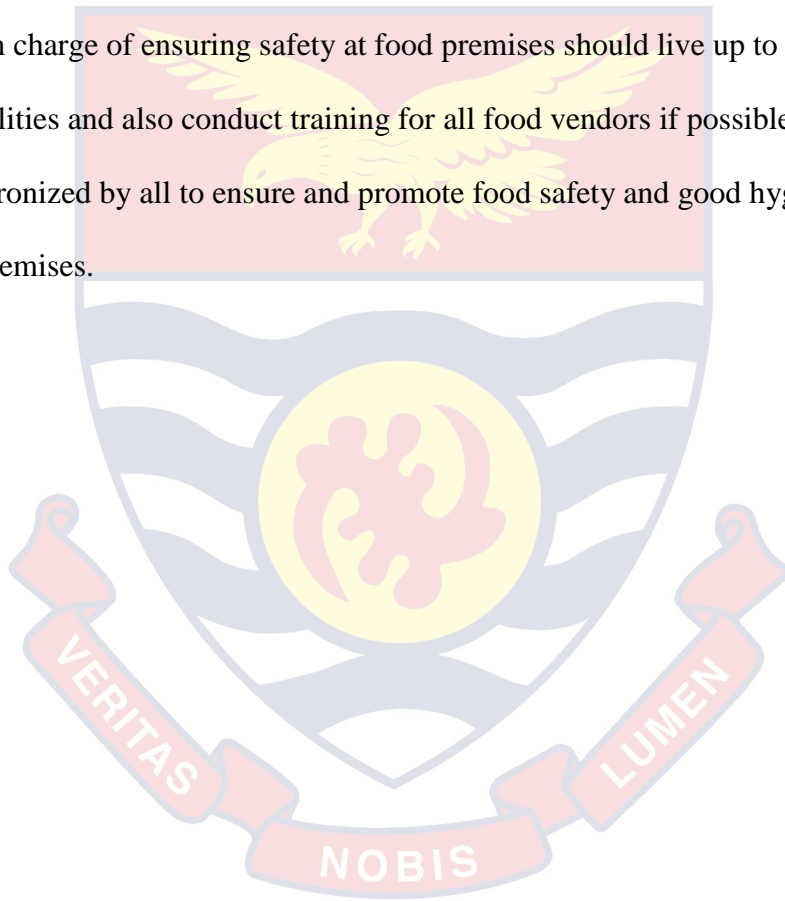


ABSTRACT

This study set out to assess food vending hygiene practices among food vendors in the casual restaurants and the organized restaurants in Prampram Township. The objectives of the study were to assess food hygiene practices among food vendors in handling, preparing and serving food, analyse the level of knowledge and training of food vendors on hygiene practices and examine the knowledge of food vendors on activities of institutional set ups that governs the hygiene practices among food vendors.

A total of 40 respondents were interviewed from selected organized restaurants and casual restaurant with 20 respondents from each set up for the study. The findings showed that the respondents interviewed at both had 52.5% of them within the youthful age. Both restaurants had 37.5% of the respondents attaining secondary education and 15% attaining tertiary education. 55% of the respondents were engaged in food vending to earn a living and not necessarily because they learnt the profession. 40% of the respondents look out for rotten parts on food stuffs, 5% look out for tender parts and 15% look at the appearance of the food stuffs before buying them for food preparation. 75% of the food vendors buy their meat products from meat shops, 15% buy from buy from abattoir and 10% buy from the open market. Majority (75%) of the respondents are connected to the national for their water supply and 25% buy water from water tankers for food preparation and serving. 20% of the respondents in the casual restaurants do not have hand washing facilities at the premises whiles at the organized restaurant 42.5% of them have between one to four hand washing facilities in the premises. 85% of the respondents have never had any training on food hygiene practices and a majority of 95% have an idea of the food vendors' certification and have undergone the medical screening

as at the time of interview. Also the respondents at the organized restaurant (10%) said they do have officers from both the Food and Drugs Authority visiting and 12.5% said Environmental Health Department of the Ningo-Prampram District Assembly visit their premises to inspect the place but at the casual restaurants it is only the Environmental Health Officers who visit their premises for inspection. The study recommended that institutional set ups (Food and Drugs Authority and Environmental Health Officers of the District) in charge of ensuring safety at food premises should live up to their responsibilities and also conduct training for all food vendors if possible or at a cost that can be patronized by all to ensure and promote food safety and good hygiene practices at all food premises.



DEDICATION

This research work is dedicated to my family and friends for their support



ACKNOWLEDGEMENT

My sincere thanks goes to the Almighty God for giving me life and strength to finish this work. I also thank my supervisor Dr. Edward Wiafe for his immense support and dedication to this research.



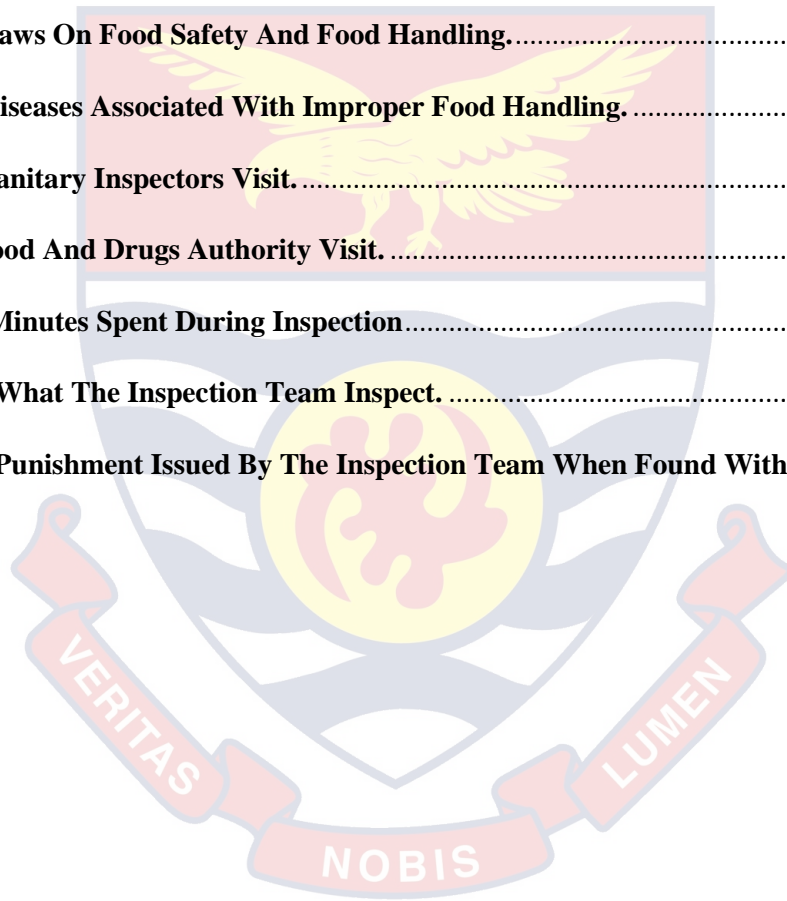
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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study.

Hygiene according to the oxford advance dictionary is the practice of keeping yourself, your living and working place or area clean in order to prevent illnesses and diseases.

According to WHO (2010), hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. Hygiene practices are important in the promotion of good health and the prevention of communicable diseases and illness. Food borne diseases occur in institutions such as schools, hotels, hospitals and workplace where food and drinks are served and sold and even at homes when good and proper handling processes are not practiced. During the process of food preparation and serving, several factors come to play which lead to food poisoning or food borne illness.

During the process of food preparation and serving many factors come to play in ensuring that the food prepared is of good standard and free from microorganisms which can cause food borne illness or food poisoning after been consumed by a second person. WHO developed measures or rules to help in the safe preparation of food and serving. These rules are referred to as the golden rules for safe food preparation. These rules include cooking food thoroughly, storing cook foods carefully, keep all kitchen surfaces meticulously clean, protect food from insects, rodents and other animals and use of safe water for food preparation.

Food safety is increasingly being used in place of food hygiene and it's made up of a range of issues that must be addressed for ensuring safety of the prepared food. Food

safety, security and nutrition remain a global concern. Hygiene practices and sanitation are among the most challenging development sectors for one to work.

Food handlers in the preparation of food do not adhere to food safety practices which lead to food poisoning and food borne illness among people who patronize their services.

Over the years' food safety measures have evolve and many concerns has been raised by people on the safety of foodstuffs from the production period on the farms, its transportation and storage and then the preparation and serving.

It is estimated by UNICEF, that 1.1 billion lack access to improved water supplies and 2.6 billion people lack adequate sanitation. One of the quotes stated by UNICEF highlighted that 'Deaths from diarrhea in 2004 were six times greater than the average annual deaths in armed conflicts'. This goes to prove that diarrhea diseases associated with food preparation and serving is a major killer in the world.

Mustapha K. (2017) in his work stated that approximately 10% to 20% of food borne illness or diseases outbreaks are due to contamination by food handlers. 2.1 million people die each year from diarrhea diseases and to 1.5 billion cases of diarrhea in children each year resulting in more than 3 million premature deaths. In developing countries up to an estimated 70% of cases of diarrheal diseases are associated with the consumption of contaminated foods. Most of these children who do die of diarrhea infections eat food prepared by vendors at various places either in school, markets or on the streets.

The number of undernourished people in the world has been on the rise since 2014, reaching an estimated 821 million in 2017 according to the Food and agriculture organization of the United Nations.

According to FAO (2014) the poor access to food and more especially good and healthy food contributes to under nutrition. It also increases childhood stunting and anemia in women of reproductive age. Access to safe nutrition and sufficient food must be framed as a human right and therefore policy makers must pay attention to the food security and nutrition of children under five, school age children, adolescent girls and women. The shift to this turn is needed to provide safe and high quality food, promoting healthy diets for all.

Food handlers all over the world are required to apply food safety measures and proper hygiene practices so as to prevent contamination and food poisoning.

Hygienic practices of food vendors can be associated and attributed to their behaviors with regards to their cooking and food handling practices. It has also been contended that our weak institutional control in the country encourages poor food vending practices, which including the selection of poor location for food preparation, serving of food under hot weather conditions, use of unsafe and unprotected water sources for the preparation of food and other poor food handling practices.

However, the socio-economic level of most food vendors and their locality influence the choices of their vending location and what their consumers prefer. (Mensah, 2002).

Street food vending is very much dominated by the informal sectors in Ghana. Just a few of restaurant operators and cuisines in hotels are registered as formal business that operate according to some safe food preparation standards according to Afele 2006.

Food vending on the streets is an important source of income to most Ghanaian women. However, reports of infections and diarrheal infections as a result of food contamination which results in death have raised a lot of concerns about the safety of food preparation and the conditions under which foods are served to the general public.

Environmental health officers as part of the conditions of service are mandated to enter and inspect and ensure proper and safe food preparation and serving among food handlers at various levels which include schools, hotels, restaurants and in the markets. As part of their routine premises inspection, they are to ensure these hygiene practices are adhered to and the Environmental health officers in the Ningo –Prampram District Assembly are not exception.

The health officers are also to medically screen the food handlers or vendors to ascertain them fit and healthy to prepare food for human consumption. The big question here is after the vendors are certified fit medically does it then mean that they are free to prepare and serve food under any conditions?

Monney, Adjei and Owusu (2013) found that, in Konongo, most food vendors serve food with their bare hands and therefore had debris of food on their hands, they also do not cover their hair while preparing and serving food, do not wear aprons, and also their food are not protected from flies. However, they further went on to state that food vendors

trained on food hygiene and safety were more likely to practice safe food handling practices.

The Food and Drugs Authority (FDA) of Ghana embarked on the licensing of street food vendors in addition to the already existing operational license for enclosed eating places. This was to help intensify the monitoring of safety practices of food vendors.

A walk along the principal streets of Prampram and one would notice a wide number of street vendors who prepare and serve food to the general public without adhering to basic food safety and hygiene practices. One would find food vendors preparing food on the bare floor, preparing and serving food without covering their hair, cooking with unsafe water and serving food uncovered to the public.

Most of the vendors have little knowledge on the safe handling of food and therefore prepare and serve to the public without adhering to any practices since they have no knowledge of it in the first place. The question then is how one practices something he or she has no idea about.

1.2 Statement of the Problem

In October 2014, joy news reported a record of about 17,000 cases of cholera with 150 deaths during a Cholera outbreak which hit Ghana. The outbreak was attributed to poor sanitary conditions across the country. There is a great increase of filth in the country and it is seemed that Ghanaians of late litter their surroundings and it is likely that food handlers are also affected by this act while food vendors require to be extra meticulous with regards to the safety and health of food sold to the public. The issue of the safety of

publicly sold food is of major concern because food vendors represent a point source of possible contamination and infection of the masses.

The issue of discussion which is of great concern is whether these diseases as a result of improper hygiene practice is found with the organized restaurants or the casual restaurant operators.

A mass medical screening organized by the Environmental Health and Sanitation Department of the Ningo-Prampram District Assembly revealed that most of the women were infected with typhoid which is a common disease associated with poor hygiene practices. Within the District we find both the casual and organized restaurant operators providing food for the community members. This therefore is a serious health concern which need to be examined to assess hygiene practices among these vendors.

1.3 Objectives of the Study.

The general objective of the study is to analyse the hygiene practices of food vendors along the coastal areas of the Greater Accra Region. The specific objectives are to:

1. Assess food hygiene practices among food vendors in handling, preparing and serving food.
2. Analyse the level of knowledge and training of food vendors on hygiene practices.
3. Examine the knowledge of food vendors on activities of institutional set ups that governs the hygiene practices among food vendors.

1.4 Research Questions.

The following research questions would guide the study.

1. How safely do food vendors prepare and serve food?
2. What knowledge do food vendors on hygiene practices?
3. What is the level of knowledge of food vendors on activities of institutional set ups that governs the hygiene practices among food vendors?

1.5 Significance of the Study.

The study would provide a deeper insight into the sanitary conditions of ready-to-eat foods, which are sold on the streets and in enclosed places, such as restaurants and hotels.

The results of the study could re-direct choices of publicly sold food to safer options.

Public health officials would also be made aware of the effectiveness of the operational licensing for food vendors and the effectiveness of their monitoring roles in food vending in the Prampram community and District as a whole through the findings of this study.

The level of risk which food vending poses to public health could be deduced from this study and measures to correct unsafe food vending practices can be targeted at specific problematic areas, as highlighted by the findings of this study.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviews theoretical issues related to food handling or vending as well as the safety and hygiene practices associated with food vending from global, continental national and regional perspectives.

2.2 Defining the practice of Food Vending

Food vending describes the practice of offering ready-to-eat food for sale (Burt et al., 2003; FAO, 2014). There are two broad categories of food vending namely formal and informal. Generally, informal food vendors comprise street food, established in make-shift structures as well as table tops and food trucks.

Informal food vending is often associated with street food vending or traditional local cultures and tastes, and there is much diversity in the raw materials used for their preparation. The food vendors buy their fresh food locally from small-scale farmers and market gardens. Their food materials are usually bought on a small scale and sometimes their food materials are usually of a low quality and low in nutritional values. Hence their foods are mostly sold on a lower price to the general public as in relation to the formal food vending.

On the other hand, formal food vendors are usually the restaurants either with seating spaces and offer full service, or casual service with or without seating places (Liu et al., 2014). Some proportion of the public prefer food prepared and served from such places.

They are usually in an enclosed environment where food served are usually served hot and on request by the customer.

In this type of food vending, (Restaurant), there is an organized set up for customers who patronize the place and is normally to be regulated by authorities from time to time.

These restaurants are typically either fine dining establishments or casual eateries which are equipped with seated tables for guests while servers take their full order and serve food and drink (Woellert, 2012)

Food vending industry over the years has become an important economic activity in most towns and cities of most developing countries. People purchase either street food or patronize the restaurant or formal food vending services for their daily meals. With the increase in urbanization and migration most people spend long hours in a day outside their homes and therefore have to rely on food vending services for their daily meals.

There is ready availability of food for all class of people which include students, market women, the sick and the elderly who sometimes cannot prepare their own meals.

A general feeding programme, based on the distribution of cooked food, may be necessary for a short initial period in situations where people do not have the necessary resources to prepare their own meals hygienically, or in some conflict situations where they risk having dry rations taken from them. However, mass preparation of cooked food has a number of disadvantages, including the risk of food-borne disease transmission (World Health Organization, 2010). As soon as conditions allow, general feeding programmes should be based on the distribution of dry rations. In some cases, as an alternative to mass feeding, it may be possible to help households by providing dry

rations that do not need cooking or by setting up temporary shared neighborhood kitchens where people can prepare food for their own families or in groups.

Prampram township has over 240 food vendors preparing and serving food to the general public and the citizens of Prampram (source: Ningo-Prampram District Environmental Health Department). This include street foods, fast food joints, restaurants and food joints where both local and foreign cuisines or dishes are prepared and served to school children and the working class and other individuals in the community.

2.3 Food safety among food vendors

Codex Alimentarius Commission (CAC) defined food safety as ‘‘the assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use’’

Food safety is an essential public health issue in all countries. The world health organization (WHO 2010) in recent times has recorded an extreme increase in number of serious outbreak of foodborne illnesses or diseases. These outbreaks in some cases involve more than one country. This has cause policy makers and consumers in many countries to re-evaluate their food safety strategies.

Most food vendors in the Philippines had knowledge in food safety and no knowledge in food legislation and waste management. Aside having knowledge, the vendors do not put the knowledge acquired into practice but compromise it for financial reasons (Azanza, Gatchalian and Ortega 2000).

In 1997 wet markets were identified as a major originating source of avian influenza H5N1 in chickens throughout Hong Kong, where 20% of the chickens in the markets

were infected. Due to concerns surrounding food safety, expanded fresh food sections in the supermarkets across china became widely popular as these retailers sold and stored food under hygienic conditions.

This made the city's health department organize training courses on food safety and hazard analysis. As a result, the level of hygiene and food safety control improved throughout the food industry.

Most food vendors in Ilorin, Nigeria, cover their hairs during food preparation and serving but their fingernails were unkempt and also do not have access to safe and clean water for food preparation and serving. Also most secondary school children do not practice safe hygiene practices (Musa 2003). Most vendors cover their hair merely because it's a cultural practice.

The World Health Organization (2010) developed five main preventive steps to enhance food safety which are cooking food thoroughly, re-heating stored food thoroughly, avoiding contact between raw foods and cooked foods and protecting food from insects and rodents. Equipping food vendors with such food safety measures in countries can impact positively on food safety.

With limited opportunities to learn safe food handling via observation, many young adults lack the knowledge needed to keep them safe from food borne diseases. A survey conducted revealed that 60% of respondents had a knowledge about the group of people at risk of food borne illness and least knowledge on source of food borne illness (Byrd-Bredbenner C, et al).

Unhygienic practices such as improper and inadequate storage of food and drinks, improper preparation and cooking, and poor personal and environmental hygiene are known to compromise food safety (Odonkor et al., 2011).

A study conducted in the Sunyani Township revealed that hygienic practices among most food vendors was very low. The hygienic practices included personal hygiene, food hygiene, kitchen hygiene and the way of storing left over foods for further use. This was due to the fact that most of the food vendors had not attended any form of training on personal, food and kitchen hygiene (Sarkodie, Emmanuel, Olivia Asana 2014).

2.4 Hand washing practice among food vendors

Washing of our hands and keeping them clean is one of the most important ways to avoid getting sick and spreading of disease causing organisms. Many diseases are spread through improper washing of hands with soap and under running water. It is very important for a person to wash the hands before and after preparing food, before eating food, after using the toilet and after touching garbage. In proper hand washing one is expected to wash hands with soap under running water either cold or warm and dry hands with a drier or clean towel or napkin (CDC). 15th October is declared by the WHO as global hand washing day to help sensitize and educate the general public on the need to wash hands properly.

It is therefore very important that people who prepare food for either individuals or a group of people practice proper hand washing in order to prevent most food borne diseases associated with improper hand washing.

Hand hygiene knowledge and correct hand washing methods were lacking among the food handlers in 38 primary schools in Hulu Langat District in Malaysia. Proper hand washing techniques were neglected by most food handlers (Mohammed, Fatimah 2013).

Food vendors in some educational institutions in Konongo practice good hygiene practices including proper hand hygiene as per structured persistence of the school authorities. The vendors carry out regular medical screening and practice proper hand washing in their respective institutions (Monney 2013).

Even more important, majority of food vendors across the country wash their hands regularly while operating food vending (Donkor et al., 2009). The current fairly high tendency to wash hands among food vendors may depend, apart from a higher knowledge and awareness, on the fact that improved water sources are now available at most vending points, both, in large cities (e.g. 85-100% in Accra and 50% in Tamale), and in small and medium cities (65-95%) (Apanga et al., 2014; Dwomfour-Asare and Agyapong, 2014; Monney et al., 2014; Nicolò, 2012, Odonkor et al., 2011).

Fifteen years ago, according to a study by King et al. (2000), only 15% of the food vendors in Ga District (Greater Accra Region) had access to potable water while 85% purchased water from vendors and six used pond water (these two latter sources of water were of poor microbiological quality, as shown by faecal coliform). Although the availability of clean water to street food vendors as well as hand washing has increased over the years, contamination is lurking where some vendors tend to misuse such crucial resource. Donkor et al. (2009) reported that 71.2% of the vendors in Accra discarded the water after washing their hand, while 18.2% used the same water for washing food equipment. Notably, the transfer of microorganisms by personnel, particularly from

hands, is of vital importance. Samakupa (2003) mentioned that during handling and preparation, bacteria are transferred from contaminated hands of food workers to food and subsequently to other surface. In support of this claim several studies have linked low infectious doses of organisms, such as Shigella and pathogenic Escherichia coli, to hands as a source of contamination (Snyder, 1998; Lambrechts, Human, Doughari & Lues, 2014). However, Rheinlander (2012) found that vendors and consumers demonstrated basic knowledge of food safety, but on basic hygiene practices such as hand washing, cleaning of utensils, washing of raw vegetables, and quality of ingredients were not their major concerns. Instead, customers selected their foods by four main criteria related to aesthetic appearance of food and food stand, appearance of the food vendor, personal trust in the vendor, as well as price and accessibility of the food (WHO, 1998, 2012; Nigusse & Kumie, 2012).

In Manhattan, Burt, Volel and Finkel (2003) found out that over half of all vendors contacted served food with bare hands. Moreover, some vendors had visibly dirty hands or gloves and no vendor once washed his or her hands or changed gloves in the 20 minutes' observation period.

According to the WHO (2010), the following are important hygienic aspects related to personal hygiene: Food vendors practicing hand washing before handling food and often during food preparation; Food vendors washing hands after going to the toilet; Food vendors drying hands after hand washing procedure; Food vendors wearing clean protective clothing Food vendors wearing head covering; Food vendors avoiding wearing of personal effects such as jewelry, watches, pins or other items in food handling areas; Food vendors ensuring that cuts and wounds are covered by suitable waterproof

dressings; Food vendors avoiding personal behavior such as smoking, spitting, chewing or eating, sneezing or coughing over unprotected food

2.5 Health Education, Promotion and Implementations.

Health education and promotion is a very important tool in promoting good health among people in a particular country. Most countries in the world have a health education and promotion unit whose main objective is to embark on a health education programme or campaign on various health issues to help prevent some food borne and communicable diseases in the country and the world at large.

In the Philippines, a research conducted by Azanza, Gatchalian, and Ortega (2000) revealed that most vendors had a lot of knowledge in food safety but not in food legislation and waste management. The vendors did not put their knowledge of food safety practices into use, but compromised food safety for financial reasons.

According to the Food and Agriculture Organization, a study in 2007, 2.5 billion people eat street food every day. Most of the vendors have either little or no formal education or just few years of schooling and therefore lack knowledge on proper food handling and their role in transmitting pathogens which lead to infections.

With limited opportunities to learn safe food handling via observation, many young adults lack the knowledge needed to keep them safe from food borne diseases. A survey conducted revealed that 60% of respondents had a knowledge about the group of people at risk of food borne illness and least knowledge on source of food borne.

In 2011 the CDC released a report stating that even though the number of foodborne illness is declining in the USA, the amount of outbreaks associated with eating at

restaurants remains constant at 52%. One of the ways or methods for curbing these food safety risks is through food safety training. Researchers have confirmed that adequate food safety training of all employees can have a positive impact on prevention of foodborne illnesses (Rowell 2011).

In a survey conducted 90% of the employees had heard about typhoid fever, 15.6% did not know how it is contracted. In addition, when asked how they knew the fever they said was caused by typhoid fever only 3.4% said they went for a stool test. Eighty point five percent (80.5%) of the food handlers had primary education and this could probably account for the poor hygiene practice amongst the food handlers. It is interesting to note that although some had no formal education some of them had heard about typhoid fever (Stella & Chimere 2010).

Government (both State and Federal) should also embark on enlightenment campaigns on a regular basis and health hygiene training and retraining sessions should be undertaken for these food handlers to create awareness about the importance of health hygiene and the risks associated with noncompliance with the rules and regulations that govern food handlers.

A study in the Sunyani municipality showed that majority (85%) of the food vendors interviewed had not attended any form of training on personal, kitchen and food hygiene and just 15% had attended training on personal, kitchen and food hygiene. The vendors also had no knowledge on laws regulating safe food preparation and serving. As a result, the vendors practice what they think is best and most are only concern with preparing the food and making income by the close of the day regardless of whatever conditions under which they prepare and sell the food.

Food and drugs law (PNDC Law 305), amendment Act 523(27), section 286 of the Criminal Code 1960(Act 29) of the republic of Ghana are some laws which mandates public officials to enter into premises to ascertain their conformity to health and good living standards

Until a few years ago (2007, according to Charles; 2012, according to Nicolò) there were overlaps in regulating the food processing sector, especially in relation to inspections and market surveillance. Such overlapping in roles and responsibilities within the different governmental actors – e.g. Ghana Standards Board (GSA), Food and Drugs Authority (FDA), local government authorities (LGAs), Ghana Tourism Authority (GTA)²⁷ – was the cause of inefficiency in the use of governmental resources and created room for increased informality in the system.

The public health Act 851 of 2012 also mandates public health and environmental health officers to ascertain the health conditions of environment where food and prepared and served.

The 1993 Local Government Act 462 permits local assemblies to enact byelaws permitting or prohibiting certain activities within their jurisdiction

In Ghana, either at the national or at local level, there is no framework policy or law specifically regulating street food vending. The sector is instead regulated on the basis of a set of scattered rules drawn from several by-laws, each one addressing different aspects (e.g. urban planning, labor, taxation, food control systems). A summary and analysis of the main bye-laws directly affecting the sector are reported in this paragraph, widely drawing from the works of Nicolò (2012) and Osei-Boateng (2012).

The Environmental Health Officers of the various Municipal, Metropolitan and District assemblies are mandated to visit food vending premises to make sure that the vendors operate under a safe and hygienic conditions so as to help in the prevention of food borne illnesses or diseases. They are also required to educate the vendors on safe hygiene practices.

As part of their duties they are to collaborate with the Laboratory department of the health centers in their various jurisdictions to medically screen the food vendors to ascertain their fitness in preparing and serving food to the public.

The Nungo-Prampram Environmental Health unit of the Nungo- Prampram district assembly on regular basis organize medical screening for the food vendors in Prampram township. In their regular visit to the premises of the food vendors they health educate the food vendors on food safety measures and proper food hygiene practices.

Upon talking to the District Environmental Health officers in the District it shows that training workshops have not been organized for the food vendors aside the regular visits to their various food preparation sites.

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 Study Area.

The research was carried out in Prampram in the quest to assess hygiene practices among food handlers. Prampram is a community with a population of 14,897 people with male been 6,911 and female 7,986. The total populations of children which fall within the infants are 2,075 which is about 13.9% of the total population of people in Prampram.

(Ghana statistical service 2010)

The people of prampram are believed to have travelled all the way from Togo to settle at the coastal area of Ghana and precisely the Greater Accra region. They are a Ga-Adangbe community and therefore celebrate the Homowo festival and practice various rites such as the puberty rites, marriage rites and naming ceremonies. Despite this people of all tribes can be found in the area.

The men in the area are mainly fishermen with the women been fishmongers with a portion been farmers and others engaging in artisanship. Some of them are also found in working in public and private sectors both in and outside the town.

The area is dominated by both Christians and Muslims with a proportion also been traditionalist and other forms of religious denominations.

3.2 Description and Location

Prampram is the District capital of the Ningo-Prampram District Assembly which was carved out of the Dangme West District Assembly under the Legislative Instrument (LI) 2132 of 2012. It lies along the coastal belt of the country. It has Dawhenya to the north,

the sea to the south with Kpone at the west and Ada at the east. It is found among the plains in the region with a flat land surface area and a little above sea level.

Prampram has two seasonal changes within the year with the raining season supporting the farming system in the area. There is a polyclinic and a senior high school with a vocational school to serve the people in the area. The area is divided into the Upper and Lower Prampram.

(Ningo-Prampram District Assembly, Works and Physical Planning 2014)

3.3 Sampling Procedure

A sample size of forty (40) was used for the research and a simple random sampling method used to collect the data. A target group of about 40 food vendors with 20 from the organized restaurants and 20 from casual restaurants were given questionnaires and observed for the research.

The restaurants operators within the Prampram Township were numbered and a simple process used to pick twenty numbers who were interviewed for the data.

3.4 Analysis of data.

The data was processed to reduce it into meaningful and usable information through the use of the SPSS. Frequency was used to describe the data. Cross tabulation was used to compare the data from the casual restaurant and the data from the organized restaurant.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

In this chapter the data collection through the distribution of questionnaire have been analyzed and presented in a graph form.

4.1 Demographic Characteristics of Respondents

On gender 37% of the respondents interviewed were male and 62.5% were female. At the casual restaurant 22.5% of the respondents were male and a majority of 27.5% been female. While at the organized restaurant, 35% of the respondents interviewed there were females and 15% were males. This means that at both restaurant, majority of their workers were females as compared to the males meaning that more females are engaged in food vending but the number of the men cannot also be over looked.

Majority (57%) of the workers employed were between the ages of 21-30, with 22.5% between the ages of 31-40, 15% between the ages of 10-21 and 5% of them been between the ages of 41-50. In the casual restaurant 25% of the respondents were between the ages of 21-30 with. 32% of the workers at the organized restaurant were between the ages of 21-30. These are people in the active age and having them employed helps reduce the rate of unemployment among the youth.

On education, all the respondents interviewed have had some form of education with a majority of 37.5% having completed secondary education, 25% completed basic education, 20% completed vocational education and 17.5% completed tertiary education. The respondents interviewed were either Muslims (22.5%) or Christians (77.5%) respectively at both restaurants. At the casual restaurant 37.5% of them were Christians

and 12.5% being Muslims. And at the organized restaurant, 40% of them were Christians and 10% were Muslims.

The number of the respondents married were 32.5%, single 57.5% and 10% been separated from their spouses as at the time of the interview. The casual restaurant had 20% of the respondents being married, 32.5% were single and 5% had been separated with their spouses. Meanwhile a majority of 32.5% were single, 12.5% were married and 5% were also separated from their spouses.

This can be seen in Table 1.

Table 1: **Summary Of Demographic Factors Of The Respondents.**

Demographic factors		Casual Restaurant (%)	Organized restaurant (%)	Total (%)
Gender	Male	22.5%	15	37.5
	Female	27.5	35	62.5
Age	10-20	10	5	15.0
	21-30	25	32.5	57.5
	31-40	10	12.5	22.5
	41-50	5	-	5.0
Highest education	Basic	15	10	25
	Secondary	10	27.5	37.5
	Vocational	10	10	20
	Tertiary	15	2.5	17.5
Religion	Christian	37.5	40	77.5
	Muslim	12.5	10	22.5
Marital status	Married	20	12.5	32.5
	Single	25	32.5	57.5
	Separated	5	5	10

4.2 Food Hygiene Practices among Food Handlers

Figure 1 presents a summary of reasons for vending food and it shows that 22 (55%) of the respondents are engaged in food vending to earn a living, 11(27.5%) learnt the profession, 2 (5%) are engaged in the business because they have no money to continue their education and 5(12.5%) we are doing it to save money.

This shows that most people are involved in food vending just to make earns meet or make a living and also save some money with just a few people actually learning the profession.

In the organized restaurants, the graph shows that a total of 14(35%) people are engaged in the job to earn a living and save money for other opportunities and in the casual restaurant it is seen that they are vending to earn a living and also they had no money to continue their education and not necessarily to save money.

The business of food vending has therefore become an option for people especially the youth to engage in to make money and there after continue their education to seek for other job opportunities in the near future.

Some of them also after a period grow interest in the job and therefore remain in the food vending business and so establish their own vending points or get employed in the organized restaurants as their permanent jobs.

At both establishments the respondents have a major reason for engaging in food vending business and the reasons are far not fetched from the normal.

Crosstab was used to determine the relationship between the variables with relation to why people are engaged in food vending and it showed that there was no significant relation, ($X^2=7.818$, $P=0.50$).

This means that the reasons for which the respondents engage in vending and the type of food vending they are engage in does not have any relationship.

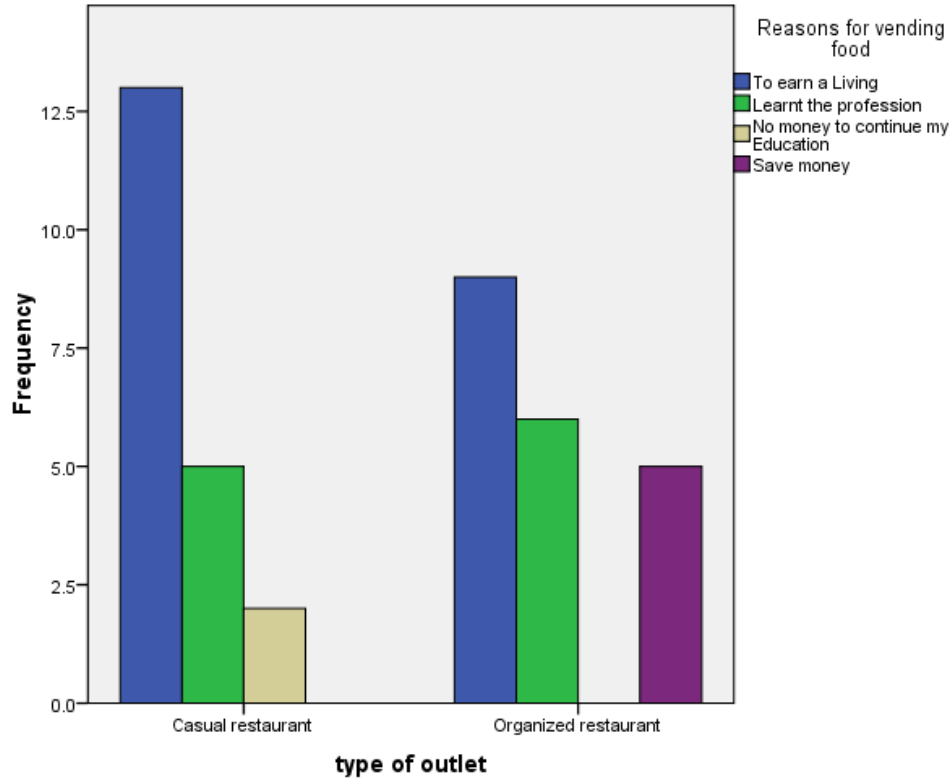


Figure 2: Reason For Vending Food

From the figure 2, 5(12.5%) out of the 40 respondents interviewed consider the cost of the food stuffs before buying them for food preparation and 35 (87.5%) consider the quality of the food stuffs.

The organized restaurants had all the respondents interviewed confirming that they consider the quality of the food stuffs and none considers the cost whiles at the casual

restaurants, 5 (12.5%) of them said they consider the cost of the food stuffs and 15 (37.5%) consider the quality of the food stuffs.

This shows that the respondents are aware of what they need and can afford before buying the food stuffs. They are more concerned with the quality of the food stuffs and not necessarily the cost of the food stuffs.

This could mean that their food may not necessarily be sold at a cheap price but at a cost that is affordable to the consumers.



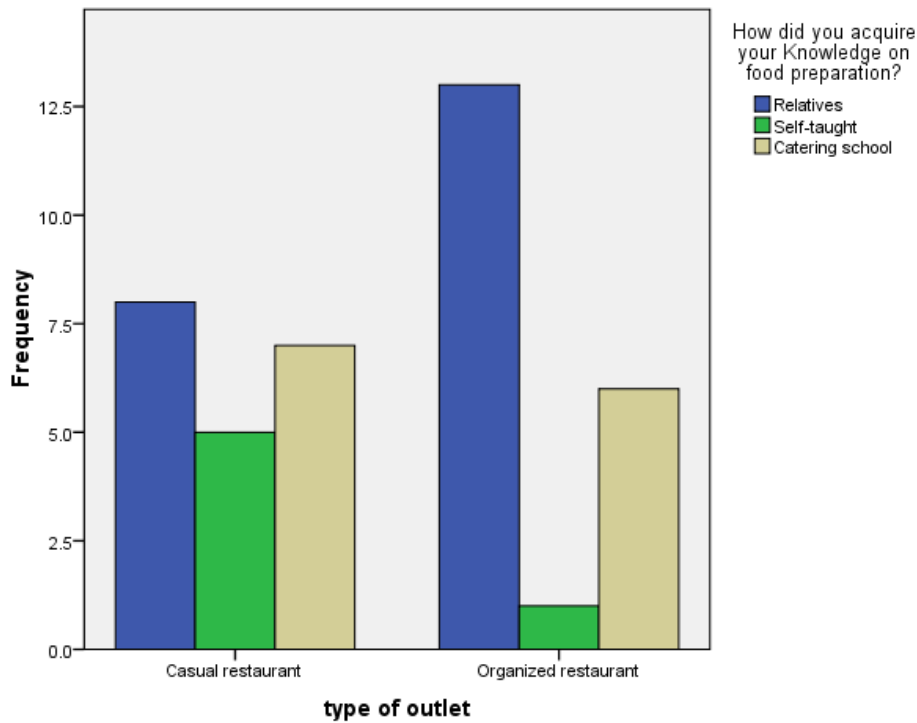


Figure 3: What Is Considered Before Selecting Food Stuffs

The figure 3, 9(22.5%) of the respondents look out for worms on the food stuffs before purchasing, 16(40%) look out for rotten parts on the food stuffs, 2(5%) look out for tender parts, 7(17.5%) look out for color of the food stuffs and 6 (15%) out of the 40 respondents look at the appearance of the food stuffs before purchasing them for food preparation.

At all the restaurants whether casual or organized they all have something they look out for before purchasing the food stuffs. They do not just buy anything for food preparation. This can be attributed to the fact that all the respondents interviewed had attained some form of education (In Table 1) and therefore had some knowledge on what to look out for before purchasing a food stuff for food preparation.

This can be either through the social media or from radio and television programs which they might have accessed or watched.

This therefore means that even if they do not get any formal training on hygiene practices they have access to other sources of information to help them improve upon their knowledge in their field of work and chosen profession.

In calculating the relationship between what the respondents consider before purchasing a food stuff, there existed a significant relation ($X^2=5.714$, $P=0.17$). Meaning that what the respondents look out for on food stuffs before buying does have some correlation with the type of establishment they find themselves.

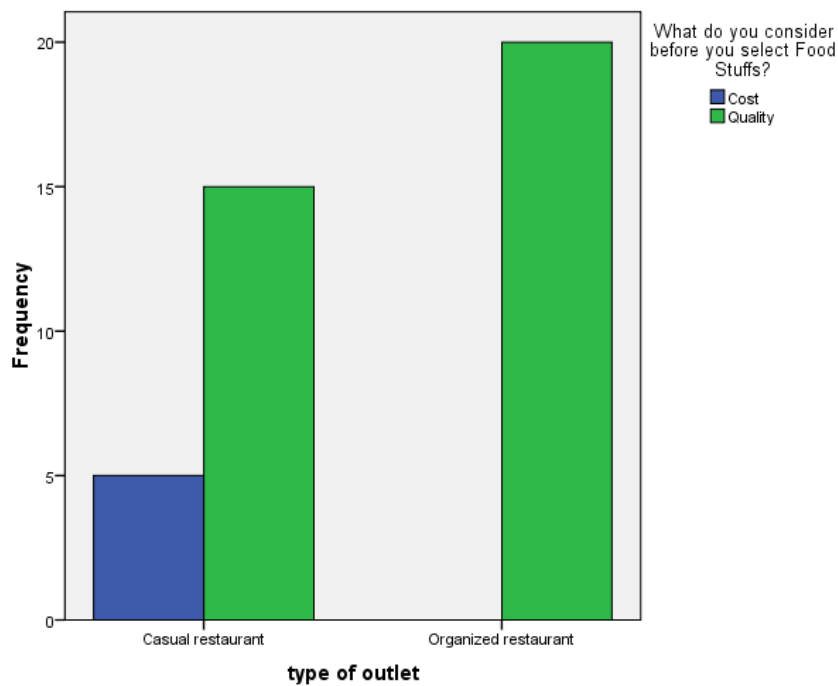


Figure 4: What Is Looked Out for On the Food Stuffs Before Purchasing

Out of the 40 respondents interviewed 30 (75%) said they buy their meat and animal foods from the meat shop and 6(15%) buy from the abattoir with 4(10%) buying from open market as shown in the figure 4.

In the organized restaurant 18 (45%) out of the 20 interviewed from the organized restaurant said they buy from the meat shop with 2(5%) buying from the abattoir whereas in the casual restaurant 12(30%) buy from meat shop, 4(10%) buy from abattoir and 4(10%) buy from the open market.

The study shows that majority of the food vendors buy their meat from either the abattoir or the meat shop where it is believed that the meat has gone through a thorough inspection by either Veterinary Officers or Environmental Health Officers at the various abattoirs or slaughter houses.

So therefore for the vendors to prefer buying their meat from these places goes to give some comfort that the meats purchase for their food preparation is safe for human consumption unless of course those responsible to make sure that these meats are slaughtered under hygienic conditions failed to do their work.

When the vendor therefore ends up buying meats that have not inspected and not safe for human health obviously cannot be the fault of the vendor who has believe in the system that meats from these places are safe for human consumption.

Upon calculating the correlation ($X^2=5.867$ and $P=0.53$) it shows that there is no significant relation between the variables with regards to where the vendors buy their meat and animal products for food preparation.

The type of establishment in which the respondent finds themselves and what they look out for has no significance on their operation of food preparation.

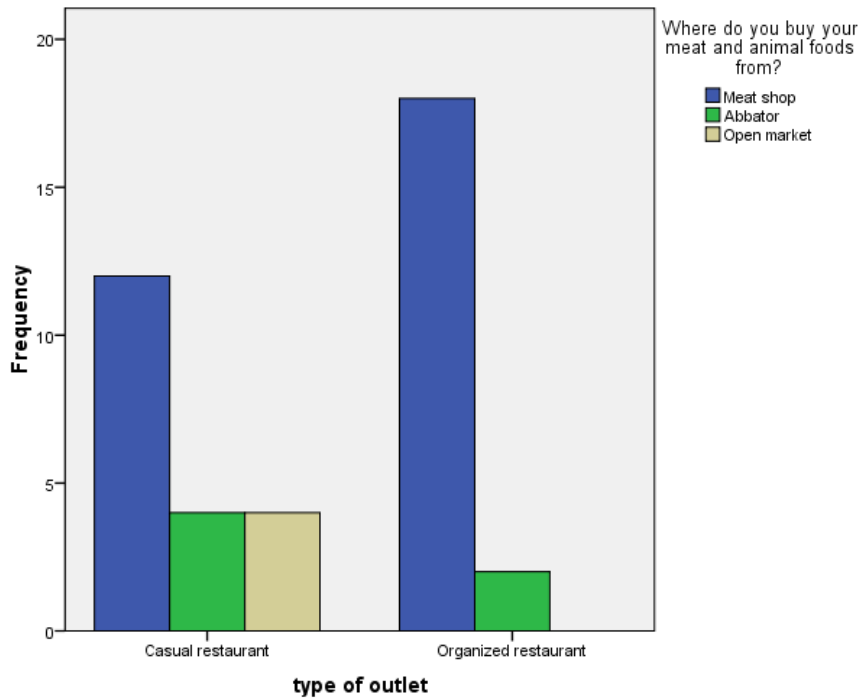


Figure 5: Where Meat And Animal Product Is Bought.

The figure 5 shows that 19 (47.5%) out of the 40 respondents look at the redness or color of the meat before buying, 10 (25%) look out for the smell of the meat, 6 (15%) look out for darkened and soft spots of the meat and 5 (12.5%) look or feel the texture of the meat. From the figure 5, at all forms of the restaurant, the respondents interviewed are concerned with the meat and the condition of the meat bought for food preparation. They all look out for one sign or the other on the meat before buying.

These are all signs that a person needs to look out for before buying meat for consumption and food preparation.

It is therefore not far-fetched that these vendors prefer to buy their meats from either the abattoir or the meat shop (figure 4) where meats from these places are believed to have been inspected and certified as fit for human consumptions.

There is no significant relationship between what the respondents look out for on meats before buying them for food preparation ($X^2=9.340$, $P=0.25$). At the various establishment what they look out does not have any significance to each other.

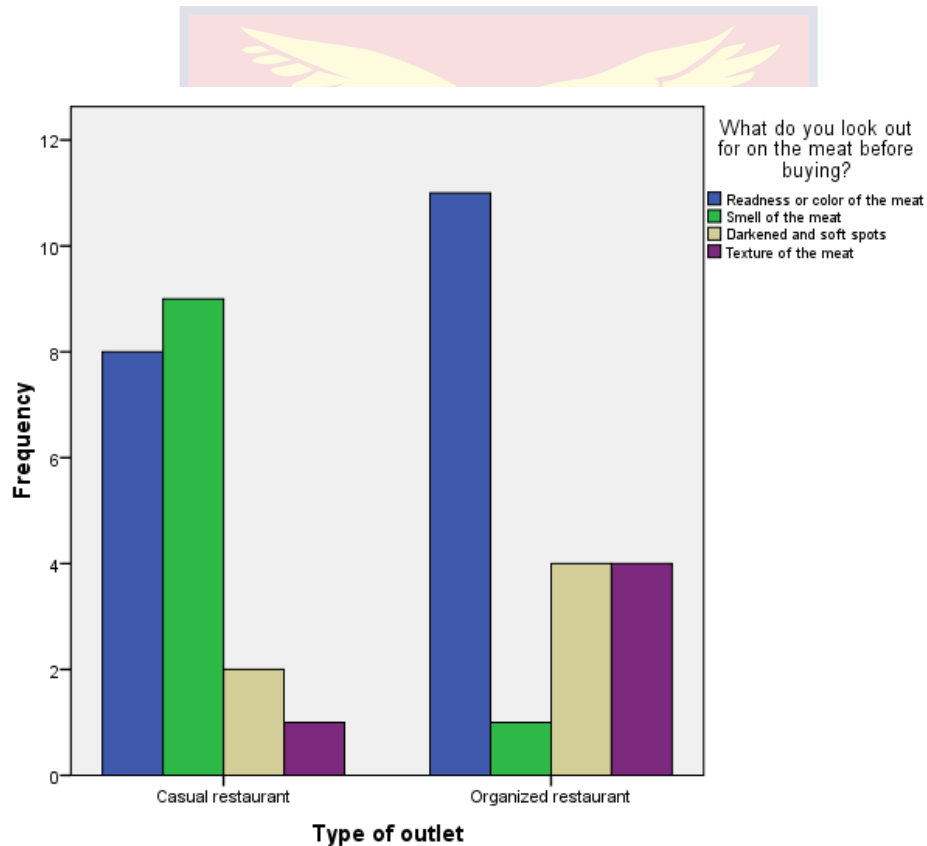


Figure 6: What Is Looked Out for On Meat Before Buying.

Figure 6 presents a summary on where food is prepared before sold for human consumption and it shows that 4(10%) out of the 40 respondents interviewed said they prepare their food at the selling place in an open space and 25 (62.5%) said they prepare their food at the selling place in an enclosed kitchen. Six (15%) of them said they prepare

their food at home in an open space and 5(12.5%) prepare the food in the home in an enclosed kitchen.

At the organized restaurant they all said they prepare the food at the selling place in an enclosed kitchen while the casual restaurant does the food preparation at different places with some preparing food in open space which expose the food to various forms of contaminants.

It can be seen from the results that majority (85%) of the respondents prepare their food in an enclosed kitchen where the food is protected from all forms of contaminants especially dust.

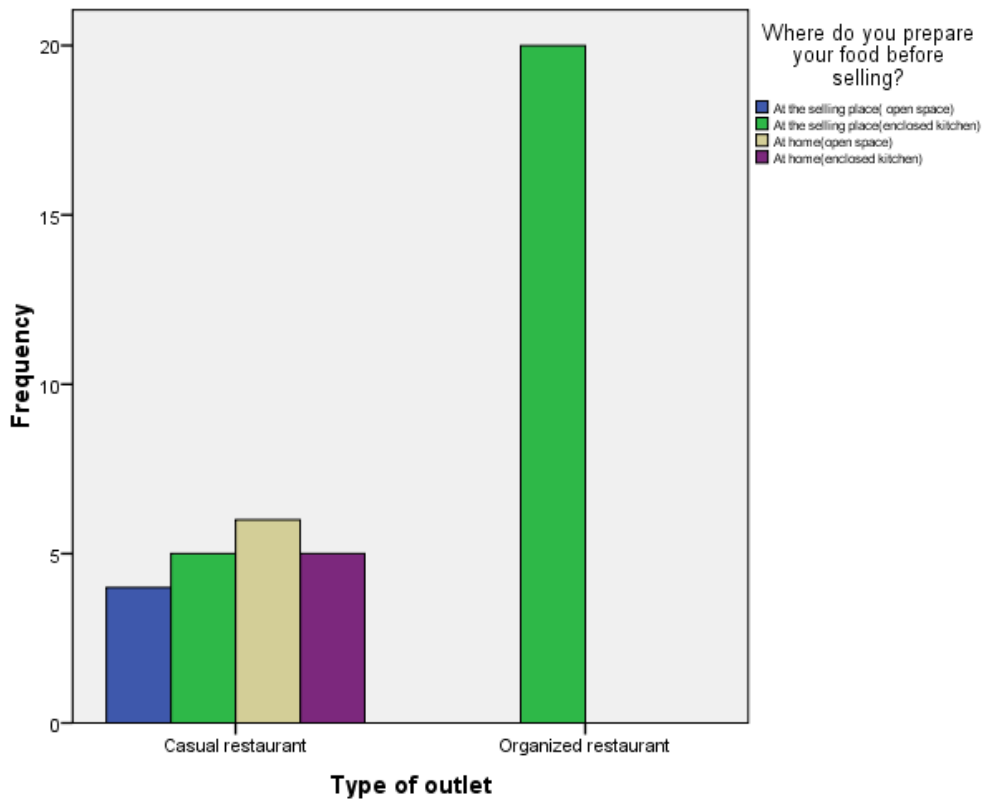
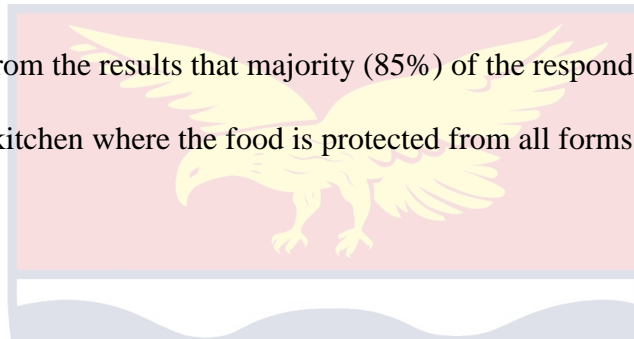


Figure 7: Where Food Is Prepared Before Selling.

Out of the 40 respondents interviewed 9(22.5%) transport their food stuffs by carrying them to the cooking sites, 2 (5%) put the food stuffs in a carriage truck to transport them to the cooking site and 29 (72.5%) put the food stuffs in a car and transport them to the cooking site as presented in the Figure 7.

During the transportation of food items, they are likely to be exposed to contaminants in the environments which are easy to alter the wholesomeness of the food.

The means of transport is therefore very important as where the food is prepared to protect it from been contaminated.

Putting food stuffs in a car may not be the best option since these cars are also used to carry all forms of products which are likely to contaminate the food stuffs but it is the best option in the area and system where the food vendors find themselves.

This option is considered more appropriate than carrying the food stuffs on the head where in some cases they are not covered since they claim it's a short distance to the food preparation sites.

There exists a significant relationship between how the respondents transport their food stuffs to the cooking sites ($X^2=11.793$, $P = 0.003$). At both establishments they have various ways of transporting their food stuffs which is very significant.

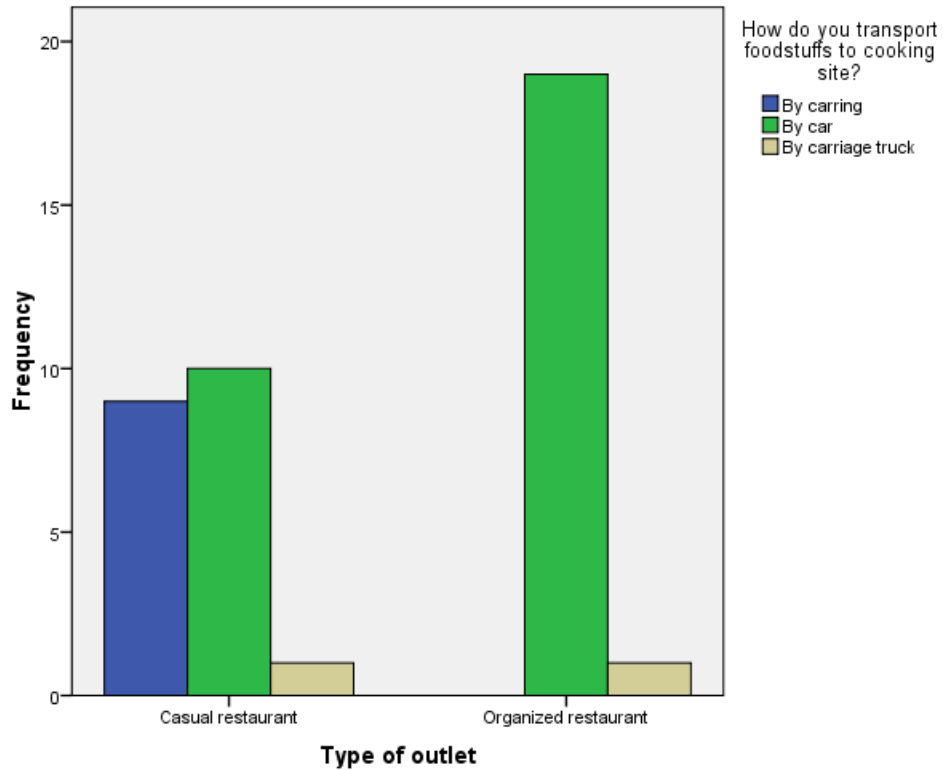


Figure 8: How Food Stuffs Are Transported To Cooking Site.

According to the Figure 8, 27 (67.5%) interviewed said they store cooked food in an ice chest, 7 (17.5%) store the cooked foods in a freezer, 4 (10%) store in a saucepan and 2 (5%) store in a plastic bowl. Majority (32.5%) of the respondents in the organized restaurant store their foods in an ice chest and the rest 7 (17.5%) store in freezer. And the respondents in the casual restaurant said they store in an ice chest with a few storing in a saucepan and plastic bowl.

The way and manner food is stored is very important to help in the prevention of contamination and food borne related illnesses. The conditions under which the food is stored is very important since food is to be stored and served hot for human consumption to help prevent some related diseases such as cholera and diarrhea.

It is seen from the figure that majority of the respondents store their food in an ice chest which keeps the food warm and hot for a long period of time without going cold.

Some of the respondents store the food in fridges and freezers and warm it for the customers when they come to buy. These are processes which are deemed safe for food storage and preservation to prevent it from being contaminated.

There is a significant relationship ($X^2=13.037$, $P= 0.005$) between the way the respondents store their foods before serving to the general public.

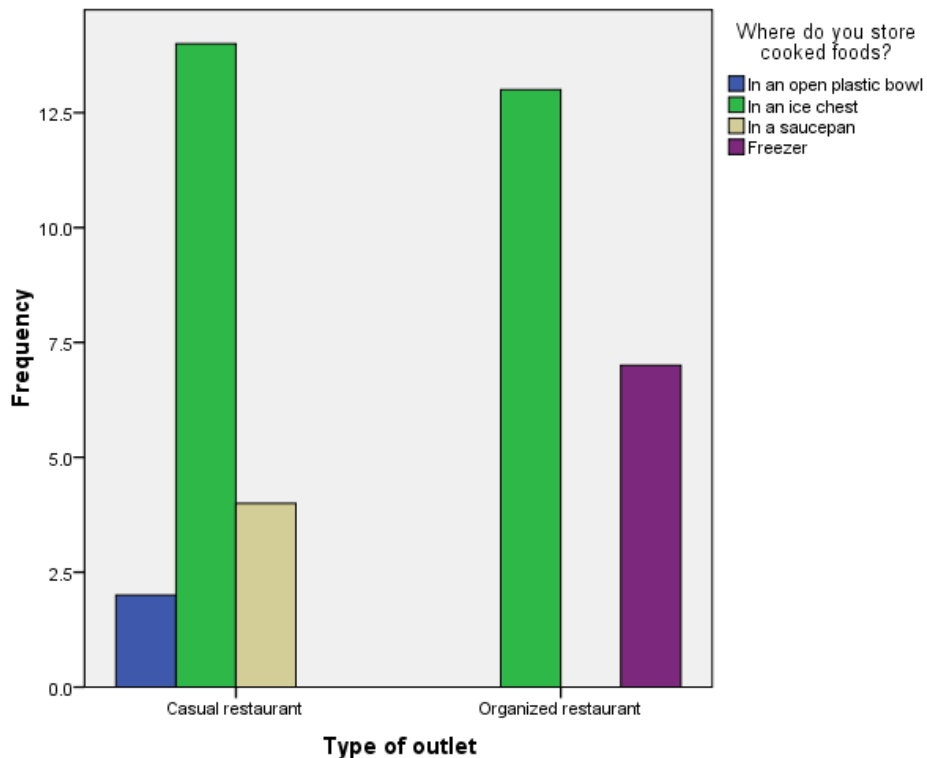


Figure 9: Where Cooked Foods Are Stored.

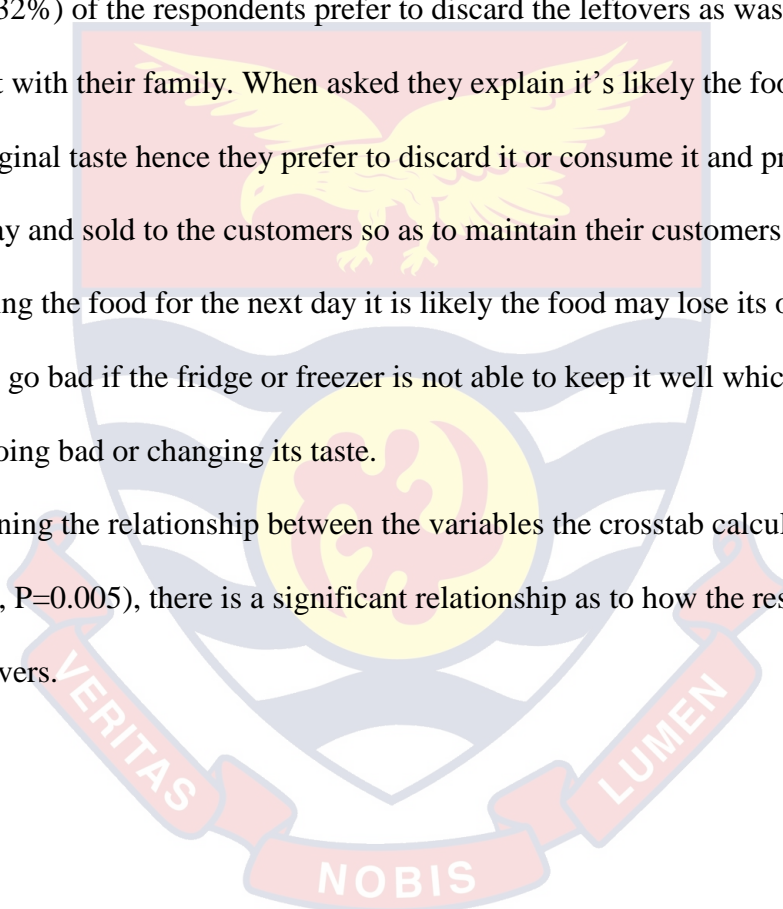
From Figure 9, 32.5% out of the 40 respondents interviewed said they discard the leftovers as waste, 10 (25%) store in a fridge for the next day, 6(15%) reheat and keep for sale the next day and 11 (27.5%) consume the leftovers with the family.

In both set ups they practice one of the measures as a way of treating leftovers at their restaurants.

Majority (32%) of the respondents prefer to discard the leftovers as waste and 27.5% consume it with their family. When asked they explain it's likely the food may go bad or lose its original taste hence they prefer to discard it or consume it and prepare fresh meal the next day and sold to the customers so as to maintain their customers.

In preserving the food for the next day it is likely the food may lose its original taste or some even go bad if the fridge or freezer is not able to keep it well which would lead to the food going bad or changing its taste.

In determining the relationship between the variables the crosstab calculation revealed that ($X^2=2.434$, $P=0.005$), there is a significant relationship as to how the respondents treat their left overs.



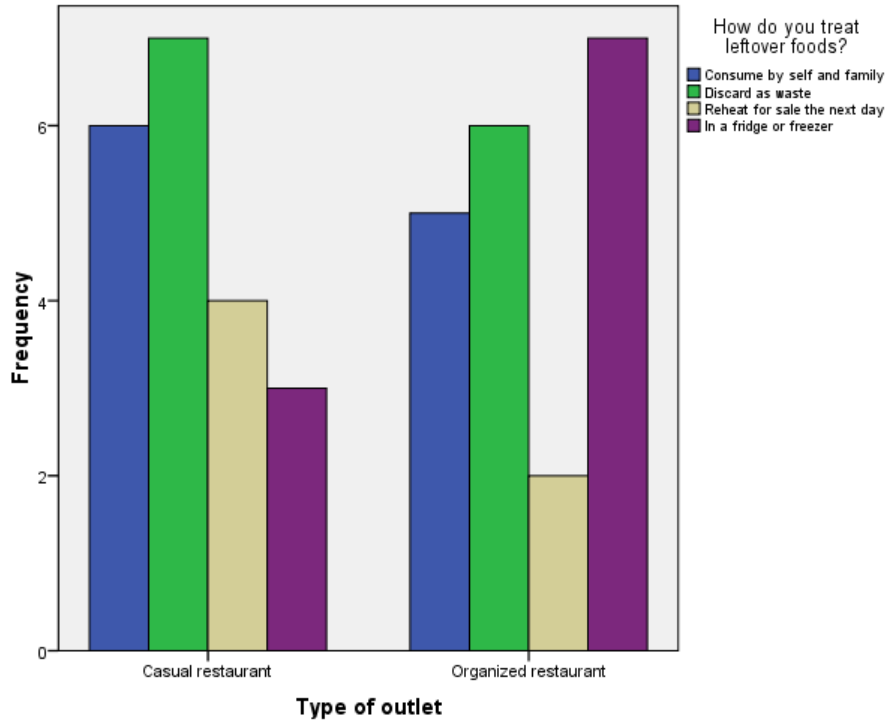


Figure 10 : How Leftovers Are Treated.

The Figure 10 shows that 30 (75%) of the respondents are connected to the national grid and get their source of water from Ghana Water Company for their food preparation and serving and 10 (25%) buy water from the tanker drivers who sell water.

Access to portable water is very important in food preparation and serving and the community where the respondents find themselves is connected to the national grid where water is in supply for almost all the time.

Majority (72%) of them are connected to the national grid and have access to water supply to help in their food preparation and serving and also help in the prevention of water and food borne illnesses.

The rest of the respondents (25%) who have not had the opportunity to connect to the national grid buy water from tanker drivers who buy the water from the national source and sell to those who need their services.

The fact that they do not have access to water in their premises does not prevent them from not using portable water for their food preparation.

There is a strong significance as to ($X^2=13.33$, $P=0.000$) as to where the respondents get their water for food preparation at the various establishments.

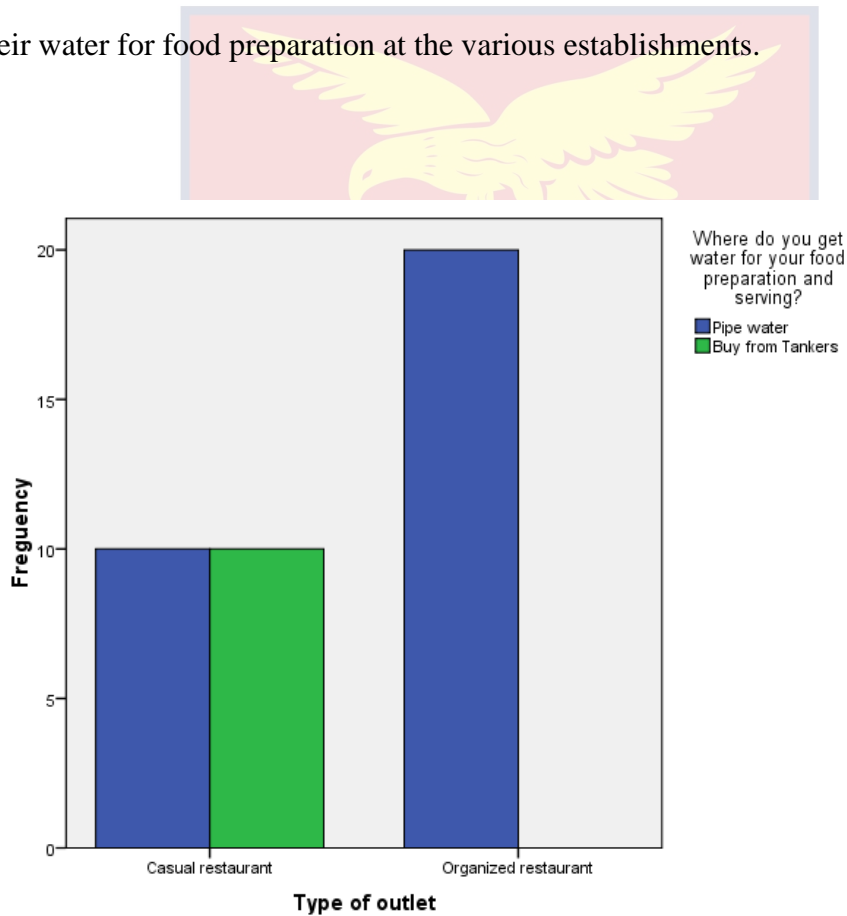


Figure 11: Source Of Water For Food Preparation.

From the Figure 11, 20 (50%) of the respondents store water in a barrel, 15 (37.5%) store in a tank and 5(12.5%) store in a bucket with cover.

In the organized restaurant 14 (35%) said they store their water in a tank and 6 (15%) store in a barrel while at the casual restaurants 14 (35%) store in barrels, 5 (12.5%) store in a bucket with cover and 1 (2.5%) store in a tank.

The respondents have in their own means found ways of making sure there is water available at all times for their food preparation and serving.

Some store their water in tanks for easy access at all times and a hand full (12.5%) storing the water in a bucket with a fitting cover to protect it from contaminants in the environment.

Inaccessibility to clean water for various forms of household chores is a leading factor to most food borne and water borne diseases and also for the promotion of hygienic practices at all levels hence with the vendors creating means to store water for their activities a step in the right direction.

Per what they can both afford they purchase to help in storing water hence at the organized restaurants majority (35%) have tanks while at the casual restaurants the majority of 35% have barrels to store their water.

A crosstab calculation shows that ($X^2=13.037$, $P=0.005$) there is a significant relationship to what they store their water for food preparation and serving.

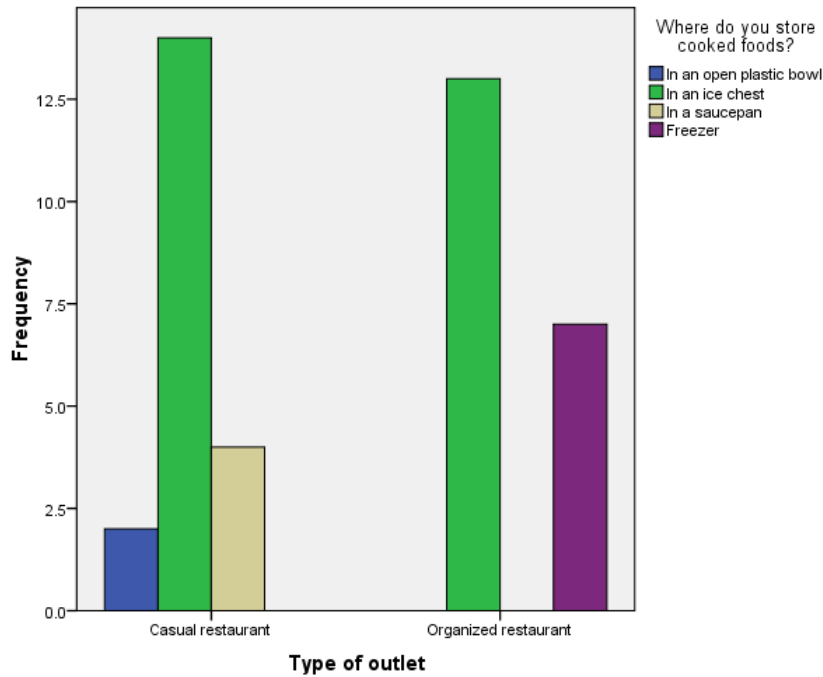


Figure 12: How Water Is Stored.

The Figure 12 indicates that 35 (87.5%) of the respondents said they wash the plates after every use and the remaining 5(12.5%) said they wash the plates at the end of the day.

In the organized restaurant 19 (47.5%) of the respondents wash the plates after every use with only 1 (2.5%) saying they wash the plates at the end of the day.

In the casual restaurants 16 (40%) of the respondents wash the plates after every use and 4(10%) of them wash at the end of the day.

One of the ways of promoting hygienic practices and preventing contamination is washing of utensils and equipment used for food preparation and serving once it has been used and not packing them down for a longer period which can lead to contamination.

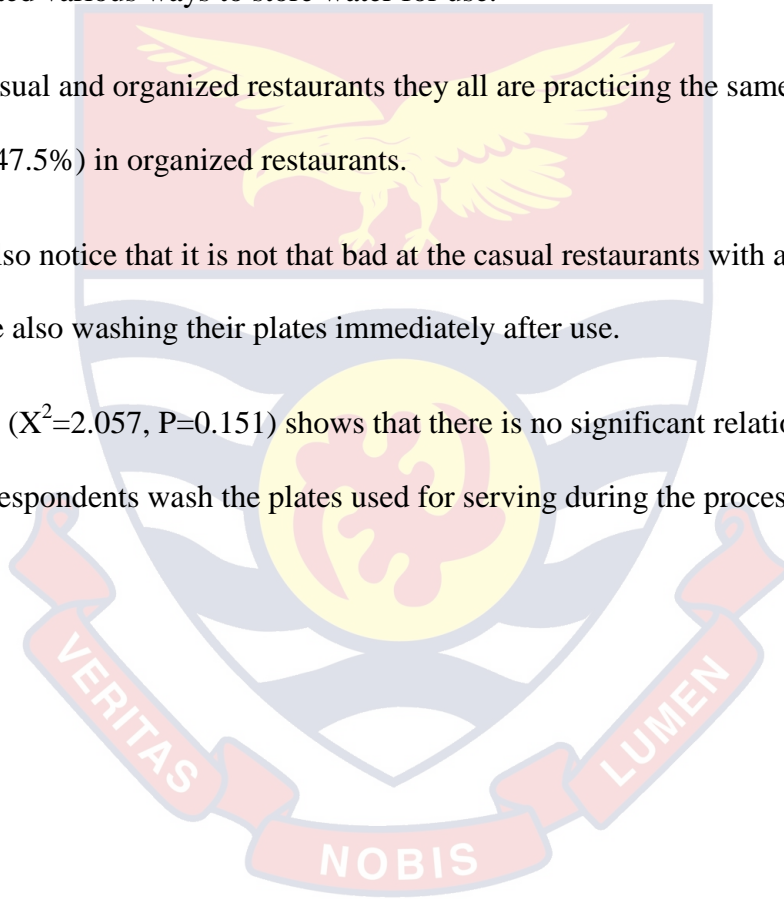
From the results majority (87.5%) of the respondents said they wash the plates after every use and do not pack them down for a long time neither do they wait all plates to be used before washing them.

This act is a step in helping to prevent contamination and this act can be attributed to the fact that the respondents have access to clean water (as shown in Figure 9 and 10) and have adopted various ways to store water for use.

At both casual and organized restaurants they all are practicing the same act with majority (47.5%) in organized restaurants.

One can also notice that it is not that bad at the casual restaurants with a reasonable percentage also washing their plates immediately after use.

The figure ($X^2=2.057$, $P=0.151$) shows that there is no significant relationship with how often the respondents wash the plates used for serving during the process of food vending.



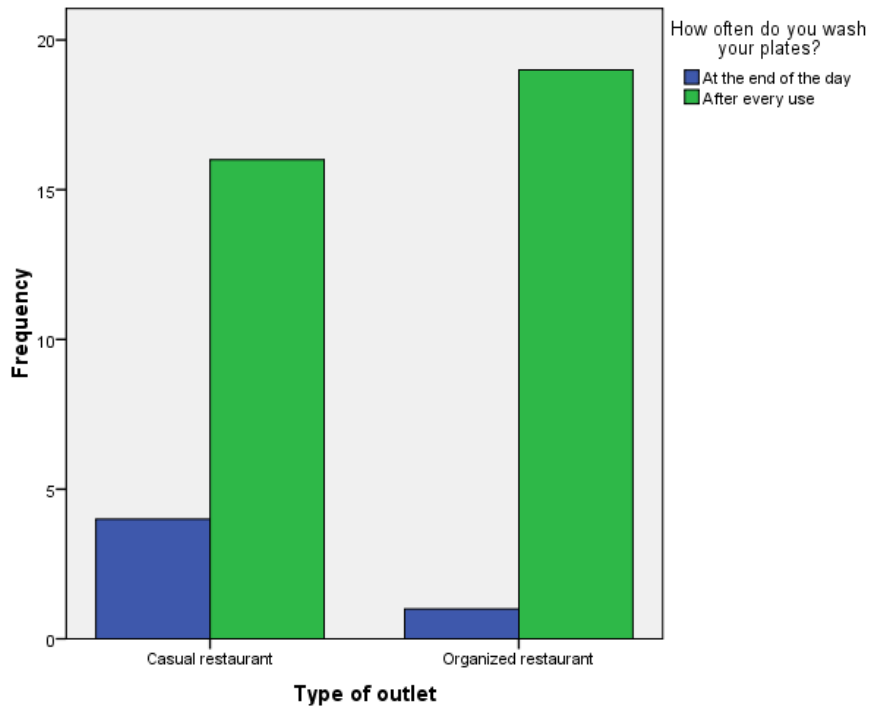


Figure 13: How Often Plates Are Washed.

The Figure 13, shows that 17 (14.5%) of the respondents said they have one hand washing facility at their premises, 11(27.5%) have 2 hand washing facility, 6 (15%) have 3 hand washing facilities, I (2.5%) respondent said they have 4 (10%) and 11 of the respondents don't hand washing facilities in their premises.

At the organized restaurant, 3(7.5%) of the respondents do not have hand washing facilities at their premises with a majority of 17(42.5%) having 1 facility and 6 (15%) having 3 hand washing facilities and 5(12.5%) having 2 hand washing facilities.

At the casual restaurants 8 (20%) of the respondents do not have hand washing facilities at their premises, with 12(30%) having 1 facility at their premises.

In promoting proper hygiene practices hand washing is very important and therefore hand washing facility at these food vending premises are very critical and cannot be overlooked.

The availability of hand washing facility at food vending sites is a source of promoting hygiene practices at the food preparation sites and preventing diarrhea infections and other food borne infection.

At the casual restaurants a great number of the respondents do not have hand washing facility at their premises which is very disturbing with a majority of respondents (42.5%) at the organized restaurant having at least one hand washing facility for both the workers and the consumers to access.

It can therefore be said that the respondents at the organized restaurants have placed great importance on having hand washing facility at their premises and this can be attributed to the group of consumers that access the facility.

There is a significant relationship ($X^2=17.155$, $P=0.002$) between the type of establishment and the availability of hand washing facility at the food establishment and the number of hand washing facilities at the establishment.

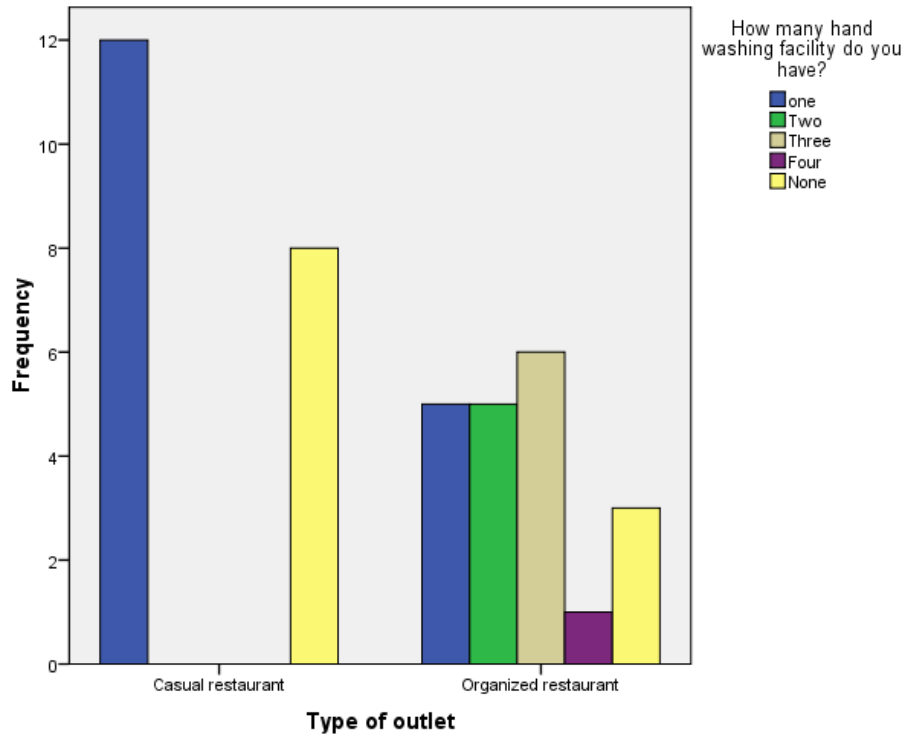


Figure 14: Number of Hand Washing Facilities Available.

In the Figure 14, it can be seen that 16(40%) out of the 40 respondents wash the hand washing facility every day, 10(25%) wash it once a week, 3(7.5%) wash it once a month and 11(27.5%) do not wash the hand washing facility at all.

At the organized restaurant 3 (7.5%) respondents said they do not wash their hand washing facilities, 9 (22.5%) wash it every day, 5 (12.5%) wash it once it a week and 3 (7.5%) wash it once a month.

In the casual restaurants 8 (20%) of the respondents do not wash their hand washing facility, 7(17.5%) wash every day and 5 (12.5%) wash once in a week.

A majority of 40% of the respondents wash their hand facility daily to keep it clean for the next day. After a long day work where people have had to use the facility it is appropriate enough to have it clean for the next day.

At the organized restaurant a hand full of 7.5% of the respondents do not wash their facilities and most of these facilities when asked have been operating for more than three years and have not taken the time or deem it necessary to wash the facility.

Equally at the casual restaurant the result shows 20% of the respondents not washing their hand washing facilities ever since they started using the facility and most of them have the facility for more than two years.

It therefore quite obvious that at both set ups there has not been much importance on the cleaning of the hand washing facility but have been provide just to be used and not concerned with whether it is clean or not.

This can be a major source of contamination and spread of infections and other water borne infections.

It is important to know that there is no significant relationship ($X^2=5.523$, $P=0.137$) between the number of times the hand washing facilities at the food establishments are washed and cleaned to keep it clean and from all forms of contaminants.

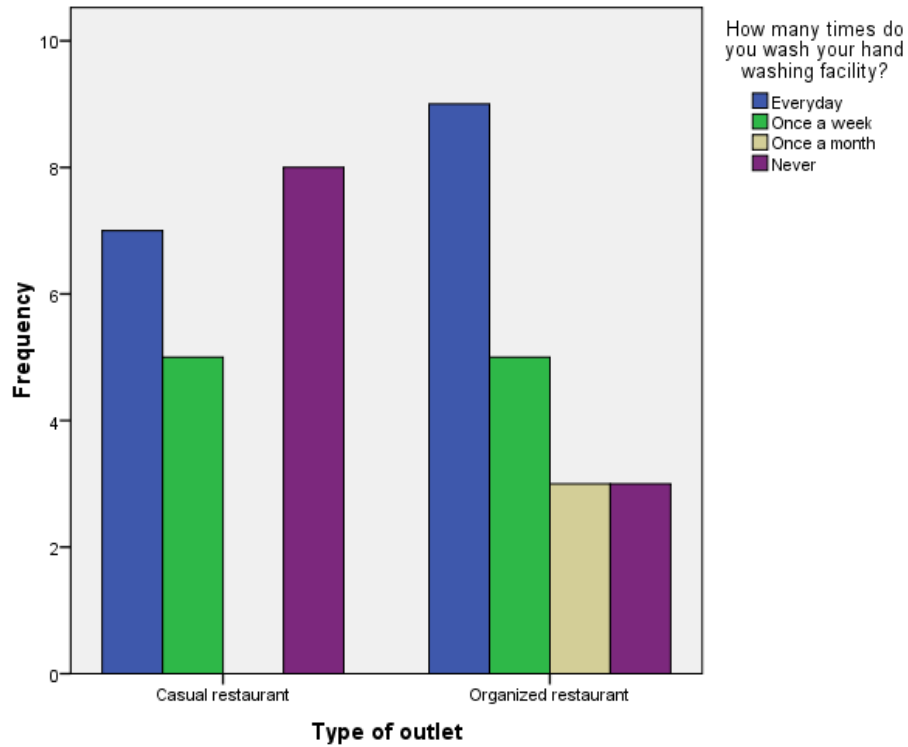


Figure 15: How Many Times Hand Washing Facilities Are Washed.

Figure 15 shows that 12(30%) of the respondents have one sanitary convenience at their premises, 6(15%) have two of the sanitary conveniences, 5 (12.5%) have three sanitary conveniences, 1(2.5%) said they have four sanitary conveniences and 16(40%) said they do not have sanitary conveniences.

Out of the 20 respondents interviewed at the casual restaurant 7 (17.5%) said they have one sanitary conveniences and 13 (32.5%) do not have sanitary conveniences.

At the organized restaurant, 5(12.5%) have one sanitary conveniences, 6 (15%) have two sanitary conveniences, 5 (12.5%) have three sanitary conveniences, 1 (2.5%) have four sanitary conveniences and 3 (7.5%) do not have sanitary conveniences.

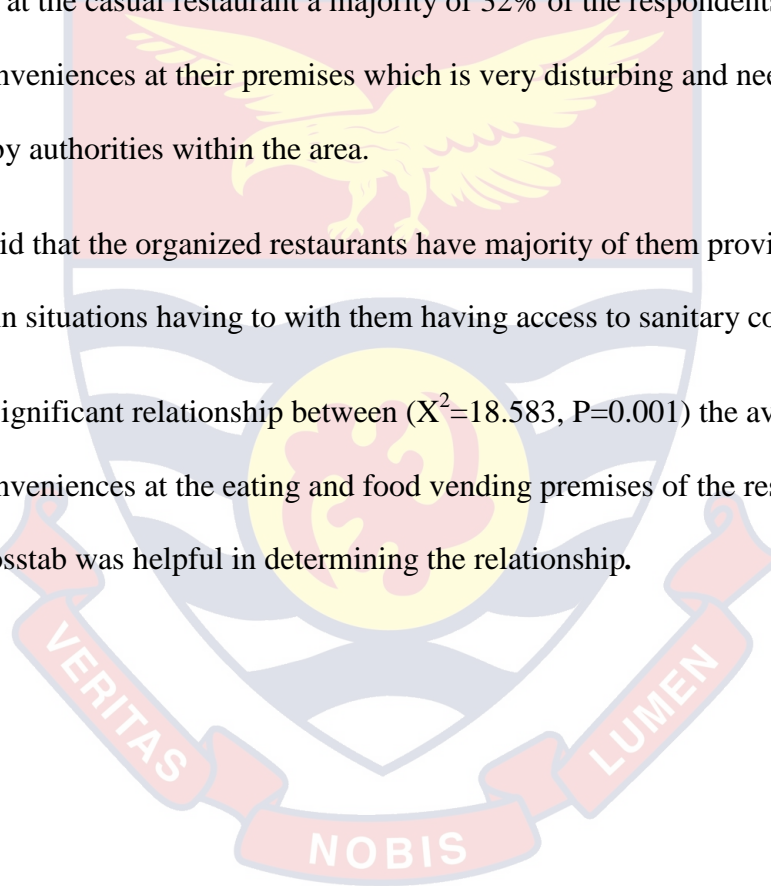
People who visit food vending premises at one point would want to visit a sanitary site and so therefore it is appropriate that the food vending sites have places of convenience for the customers.

The result shows that 7.5% of them said they do not have sanitary facilities and when asked where the customers they said they rely on a public toilet nearby.

Meanwhile at the casual restaurant a majority of 32% of the respondents do not have sanitary conveniences at their premises which is very disturbing and needs to be addressed by authorities within the area.

It can be said that the organized restaurants have majority of them providing for their customers in situations having to with them having access to sanitary conveniences.

There is a significant relationship between ($X^2=18.583$, $P=0.001$) the availability of sanitary conveniences at the eating and food vending premises of the respondents. The use of a crosstab was helpful in determining the relationship.



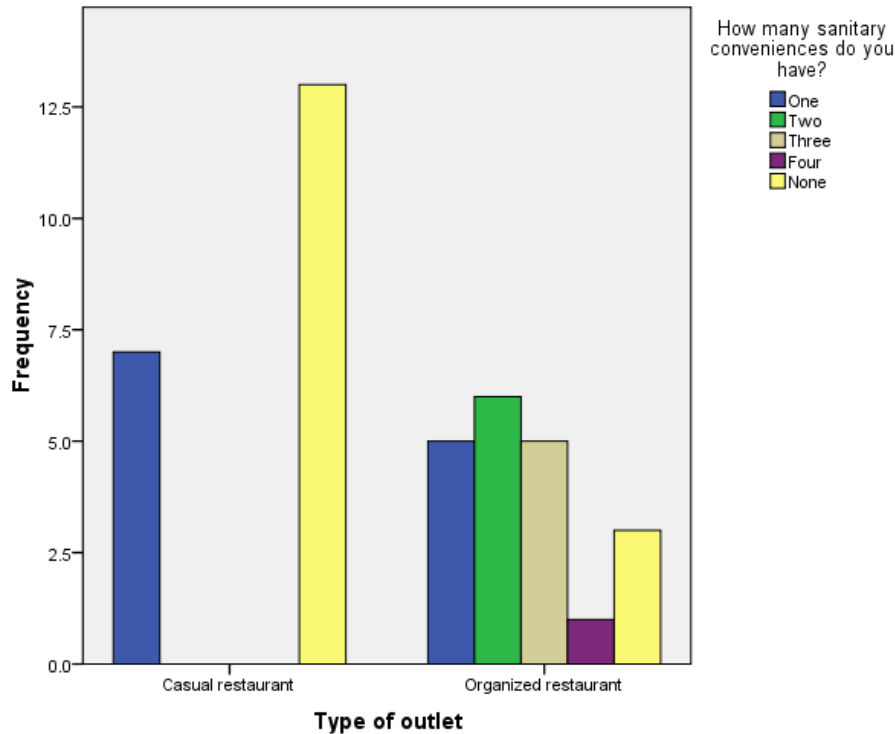


Figure 16: Number of Sanitary Conveniences Available At Premises

4.3 Knowledge and Training on Hygiene Practices

The Table 2 shows that a total of 90% of the respondents undergo medical screening once every year, 5% undergo medical screening every quarter with 5% saying they have never undergone medical screening.

42.5% of the respondents who operate a casual restaurant undergo medical screening once a year, 5% undergo every quarter and 2.5% have never undergone medical screening.

47.5 % of the respondents which were with the organized restaurants said they undergo medical screening once a year and 2.5% said they had never undergone medical screening.

The result shows that at the organized restaurants majority of the workers had been certified before engaging in the food vending operation meanwhile the situation cannot be described as poor at the casual since most of the respondents there had also been medically screened.

It can therefore be said that at both restaurants the workers are cautious of their health and the health of the workers and so have put in great efforts to get their workers medically certified to prepare food in order to keep their business running.

But in spite of this there is no significant relation ($X^2=3.088$, $P=0.214$) between the type of outlet and the process of going through medical screening before vending food. The respondents have been medically screened but it does not have any bearings on the type of establishment they operate.

Table 2: Undergoing Medical Examination.

Type of outlet	Once a year (%)	Quarterly (%)	Never (%)	Total (%)
Casual restaurant	42.5	5	0	47.5
Organized restaurant	47.5	0	2.5	50
Total	90.0	5.0	2.5	97.5

Table 3 gives a summary of the last time the respondents underwent medical screening as at the time of interview and out of the 40 respondents interviewed, 15% of them who were operating a casual restaurant said they had undergone medical screening a year ago, 20% had undergone 6 months ago and 10% had undergone 3 months ago.

With the organized restaurants 25% had undergone medical screening a year ago, 5% had undergone screening 6 months ago and 20% had undergone 3 months ago.

The result indicates that all the respondent had all undergone medical screening but at different times according to the time at which they started operating. This goes to mean that the restaurant operators had an idea about the medical screening organized for the food vendors and had therefore made the efforts to do it.

At both the casual and the organized restaurants the respondents had all undergone medical screening.

There is no significant relationship between ($X^2= 5.844, P=0.054$) the last time the respondents had undergone medical screening and it is found in all the establishments.

Table 3: Last Time Undergoing Medical Screening.

Type of outlet	One year Ago (%)	6months ago (%)	3months ago (%)	Total (%)
Casual restaurant	15.0	20.0	10.0	45.0
Organized restaurants	25.0	5.0	20.0	50.0
Total	40.0	25.0	30.0	95.0

The Table 4 shows that, out of the 40 respondents interviewed all 50% respondents from the casual restaurant had never undergone training on food hygiene practices.

Out of the 20 interviewed from the organized restaurant, 30% have never had training, 2.5% said the training is done every 6 months and 17.5% said the training is done once a year.

The result shows that at the casual restaurant all the respondents interviewed had never had any form training on food hygiene practices. They had no idea there is the need for

them to be taken through any form of training on their choice of work that they find themselves in by any institution.

At the organized restaurants, majority of the respondents (30%) also said they had they had training on food hygiene practices since they started operating and working. The remaining 20% of the respondents said they have had training and was done once a year and in every six months.

It therefore obvious that at both restaurant a little is done on giving the food vendors training on food hygiene by the institutions mandated to do so by the government.

In knowing the relationship existing between the type of outlet and training the respondents have had on food hygiene practice a cross tabulation calculation showed that there is a significant relationship ($X^2= 10.000$, $P= 0.007$).

Table 4: Training On Food Hygiene Practices.

Type of outlet	Once Every Year (%)	Every 6 Months(%)	Never (%)	Total (%)
Casual restaurant	0	0	50	50
Organized restaurant	17.5	2.5	30	50
Total	17.5	2.5	80	100

The Table 5 indicates that 50% which makes up the total number of respondents interviewed from the casual restaurant had never undergone training and therefore had no idea on who gives the training.

Out of the 20 respondents from the organized restaurants 22.5% said the training was done by the Food and Drugs Authority, 2.5% said it was done by the Environmental Health Officers and 25% said they have never had training.

The respondents who said they have had training on hygiene practices said the training was done by both the Environmental Health Officers of the Ningo-Prampram District Assembly and the officers of the Food and Drugs Authority.

Table 5: Institution That Gives Training on Food Hygiene Practices.

Type of outlet	Food and Drugs Authority (%)	Environmental Health Off. (%)	None (%)	Total (%)
Casual restaurants	0	0	50	50
Organized restaurant	22.5	2.5	25	50
Total	22.5	2.5	75	100

From Table 6, out of the 40 respondents interviewed, 62.5% of them had no idea of any law regarding food safety and food handling. 10% of them said they are aware of Food and Drugs Act and 5% are aware of the Public Health Act.

The respondents at the casual restaurants did not have any idea or knowledge on laws on food safety and proper food handling.

At the organized restaurants the respondents said they have an idea about the Food and drugs Acts on safe food managements and the Public Health Acts on food safety.

It is therefore a question of whether the food vendors are just aware of the laws or are also abiding by the laws on food safety.

Table 6: Laws on Food Safety and Food Handling.

Type of outlet	Food and drugs Act (%)	Public Health Act(%)	None (%)	Total (%)
Casual restaurant	0	0	50	50
Organized restaurant	10	12.5	12.5	50
Total	25	12.5	62.5	100

The Table 7 shows that 32.5% of the respondents cited typhoid as a diseases associated with improper food handling, 45% cited cholera and 22.5% said diarrhea.

All the respondents interviewed had an idea of diseases associated with improper food handling and poor hygiene practices associated with food handling.

At both restaurants the respondents responded to one of the diseases as been associated to improper food handling.

This indicates that the respondents have the knowledge that if they engage in improper food handling is comes with some diseases which are very detrimental to human health but as to whether they make efforts to prevent these diseases is also another question to answer.

Table 7: Diseases Associated With Improper Food Handling.

Type of outlet	Typhoid (%)	Cholera (%)	Diarrhea (%)	Total (%)
Casual restaurant	20	25	5	50
Organized restaurant	12.5	20	17.5	50
Total	32.5	45	22.5	100

4.4 Institutional Set-Up Governing Safe Practice of Food Vendors.

The Table 8 indicates that 13 of the respondents from both restaurants said that the sanitary inspectors visit their place every month, 15 said they visit the place every quarter, 11 said they visit the place every six month and 1 said they visit once in a year at both restaurants.

This means that every restaurant they all agreed to the fact that they do have officers from the environmental health department visiting their premises regularly to inspect the place and what goes on there.

Table 8: Sanitary Inspectors Visit.

Type Of Outlet	Monthly (%)	Quarterly (%)	Every Six Month(%)	Once A Year(%)	Total (%)
Casual Restaurant	17.5	20	12.5	0	50
Organized Restaurant	15	17.5	15	2.5	50
Total	32.5	37.5	27.5	2.5	100

The Table 9 indicates that, at the casual restaurant they all 20 respondents (50%) said they have never had never had officers from the food and drugs authority visiting them for inspection.

At the organized restaurant, 2.5% said they visit every month, 2.5% also said they visit every quarter, with 10% saying they visit every six months and 17.5% said they visit once a year. Other 17.5% said they have never visited.

It can therefore be seen that at the casual restaurants they have never had a visit from the Food and Drugs Authority for any inspections ever since they were established. They therefore are not able to know whether what they are doing is the right thing or not but just put in his best.

The organized restaurants do have visitors from the food and Drugs Authority who do inspections and correct them when they are not doing something right with about 17.5% of them not been visited by officers from the Food and Drugs Authority.

Table 9: Food and Drugs Authority Visit.

Type of Outlet	Monthly (%)	Quarterly (%)	Every Six Month (%)	Yearly (%)	Never Visited (%)	Total (%)
Casual Restaurant	0	0	0	0	20	50
Organized Restaurant	2.5	2.5	10	17.5	17.5	50
Total	2.5	2.5	10	17.5	67.5	100

From the Table 10, out of the 40 respondents interviewed, 27.5% said the officers spend 10 minutes during an inspection, 50% said they spend 30 minutes, 37.5% said they spend one hour during an inspection and 5% said they spend 5 minutes during an inspection to their respective premises.

At the casual restaurants majority (20%) of the respondents said the officers spend thirty minutes at a visit, 17.5% said the officers spend ten minutes and 10% of the respondent said the officers spend one hour during a visit.

At the organized restaurant majority (30%) of the respondent said the officers spend thirty minutes during a visit and 10% spend ten minutes during their visit.

At both restaurants the officers on their visit spend a maximum of about one hour and a minimum of about ten minutes during a visit for an inspection.

By spending this number of minutes they are able to see some nuisances and mistakes so they can be corrected and also where sanctions are to be made it can be done during the inspection.

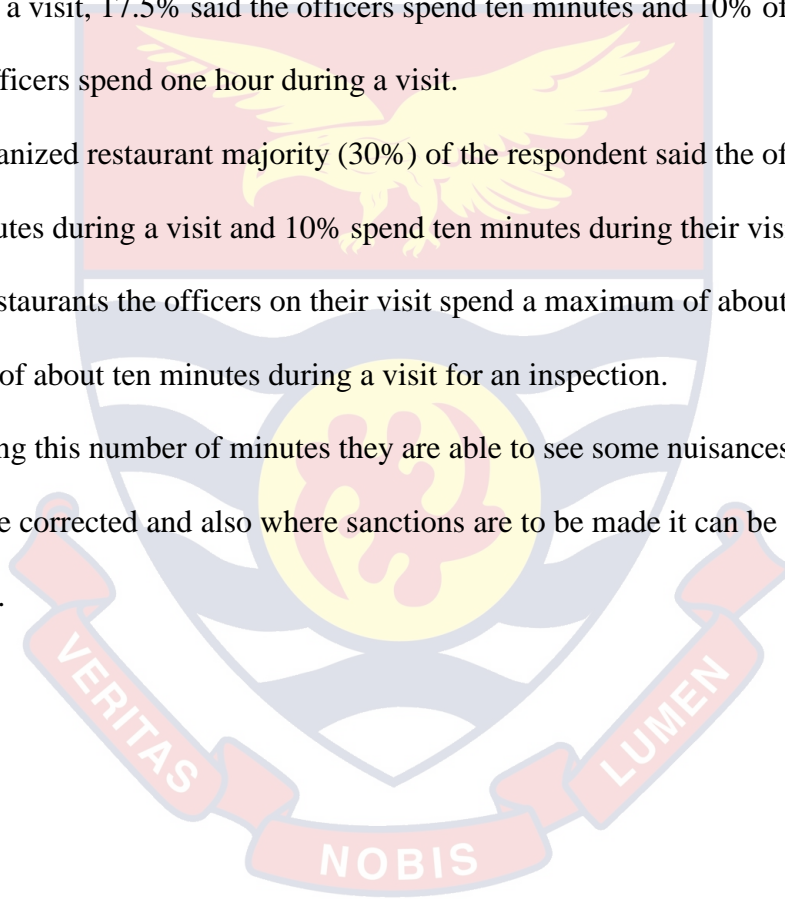


Table 10: Minutes Spent During Inspection

Type Of Outlet	Ten Min(%)	Thirty Min.(%)	One Hour(%)	Five Min. (%)	Total (%)
Casual Restaurant	17.5	20	10	0	47.5
Organized Restaurant	10	30	5	5	50
Total	27.5	50	37.5	5	97.5

Table 11 shows that at both restaurant 72.5% of the respondents said that the inspection team inspects the environments on the visit to the premises, 20% said they inspect the food vendor's certificates, 5% said they inspect the food stuffs and 2.5% said they inspect the protective wares.

At the casual restaurants, a majority (30%0 of the respondents said the officers inspect the environs where the food preparation and serving takes place whiles the 20% said they inspect the food vendors certificate issued by the officials after undergoing medical examination.

5% of the respondents from the organized restaurant said the inspection team inspects the food stuffs used for the food preparation and 2.5% of the respondent said they inspect the personal protective wares of the workers with a majority of 42.5% saying the officers inspect the environs where food is prepared and served.

It is obvious that the officers who visit both set ups have an idea of what they are looking for and it does not depend on where it is casual restaurant or an organized restaurant they look out for the same thing.

Table 11: What The Inspection Team Inspect.

Type Of Outlet	The Environs (%)	The Health Certificate Of Food Vendors(%)	The Food Stuffs (%)	The Protective Ware(%)	Total (%)
Casual Restaurant	30	20	0	0	50
Organized Restaurant	42.5	0	5	2.5	50
Total	72.5	20	5	2.5	100

The Table 12 shows that, 30% of the respondents said that the inspection team issues a fine when you are found with an offence, 60% said you are given a warning when found with an offence, 5% said when you are found with an offence you are given invitation to come for training and 5% said when you are found with an offence nothing is done to you.

At both restaurants majority (90%) of the respondents said the officers do issue a fine and warning after an inspection and an offence found.

By the officers been given these sanctions it is a deterrent to other respondents who are engaged in some practices that are not appropriate with regards to food handling.

Table 12: Punishment Issued By The Inspection Team When Found With An Offence.

Type Of Outlet	Fined (%)	A Warning Issued(%)	Invitation To Training In A Sanitation Programme(%)	Nothing Done(%)	Total (%)
Casual Restaurant	15	30	0	5	50
Organized Restaurant	15	30	5	0	50
Total	30	60	5	5	100



CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

5.1.1 Demographic Characteristics Of Respondents

From the data collected, it shows that 35% of the respondents were males and 65% were females with more of them found in the casual restaurants. This goes to prove that more men are getting involve in the food vending business unlike it has been believed over the years.

Majority of these people fall within the youth of the people in the Prampram Township with a number of 57.5% of respondents interviewed within the ages of 21-30. This then shows that most of the youth are now getting into food vending and maybe attributed to the rate of unemployment in the country. This has led most of the youth into other forms of jobs to make earns meet and make a meaning out of their lives and food vending is certainly an option.

The data collected indicates that all of the respondents interviewed had attained some level of education with majority of 37.5% having attained secondary education and 15% attaining tertiary education.

This shows that the respondents have knowledge in reading and writing and can therefore read inscriptions on products that they purchase for the preparation of their food. But the

concern is if this knowledge is applied in their field of work and the in hygiene practices associated with food handling and serving.

Azanga in his work at the Philippines showed that most food vendors had attained some level of education and had some knowledge in food legislation but did not put it into practice in their food vending operation. They compromise their knowledge with making money at the end of the day's activity.

It is yet to identify if it is so with the food vendors in the Prampram Township interviewed during this study.

5.1.2 Food Hygiene Practice among Food Vendors

The results of the data collection showed that all the respondents had attained some level of education at both the organized and casual restaurants and as such 55% of them were engaged in food vending to earn a living and about 27.5% of them had actually learnt the profession and hence engaged in it.

Majority of them when buying food products for food preparation consider the quality of the products before buying and do not compromise on the cost of the products. They all also look out for either rotten parts or worms on the food stuffs before purchasing.

At both the casual and organized restaurants they all look out for one particular thing on the food stuffs before buying.

This can be attributed their academic knowledge attained and the fact that they can read information and understand certain messages when they are being circulated on the various social medias to help improve on the food vending.

Andargie report suggested that there was a high level of infection among illiterate food vendors whiles Zain and Naing report that although the food handlers they surveyed did not have formal education there was no significant difference in attitudes both educated and uneducated. This two reports can be true either ways. It can be said that the vendors interviewed in Prampram are conscious of basic hygiene practices due to their level of knowledge from the formal sector and also due to the frequent announcement on the need to practice safe food hygiene is a major factor to their attitudes towards what food safety.

With respect to the meat and animal product used for the food preparation, at both set ups, majority (70%) of the respondents buy their meats from the meat shop in town and before they look out for smell from the meat, the appearance and the color of the meat before they buy for food preparation.

It can therefore be said that the food vendors are aware of some basic food safety and therefore apply it to their field of work in order to prepare safe food for their consumers.

At the organized restaurants they have water connected from the national grid and there are storage tanks available to store water for use in case of water shortage whiles at the casual restaurants some do not have water at their premises and hence buy water from water tankers for the food preparation. This can be a major cause of some vendors at the casual restaurants not having hand washing facility and sanitary conveniences at their premises for both the workers and consumers.

Daniku's report in 2015 revealed that majority of food vendors across the country wash their hands regularly, and this can be said to be true since it confirms the result of the data

collected among the food vendors in Prampram township operating both casual and organized restaurants.

All of this can be attributed to the improved source of water supply in the Prampram Township and its environs.

The data collected also shows that about 20% to 25% of the food vendors at the casual restaurants do not wash their hand washing facilities regularly and this maybe because they are careful of the use of water and hence not washing the facilities regularly and this can be a source of infection for both the vendors and their consumers.

The presence of the hand washing facility is not just enough but a regular washing of the facility is equally important to help promote proper food safety practices.

Majority (32.5%) out of the 20 respondents interviewed at the casual restaurants do not have a sanitary convenience at their premises for both the workers and the consumers' whiles at the organized restaurants there were sanitary conveniences for both the works and the consumers.

5.1.3 Knowledge and Training on Hygiene Practices

The data collected revealed that majority (95%) of the respondents interviewed do have idea about food vendor's certification and do undergo the medical screening every year by certified bodies within the District where they find themselves.

This is an exercise conducted by the environmental Health and Sanitation Department in the Ningo Prampram District Assembly in collaboration with the Laboratory Technicians at the Prampram Polyclinic on a yearly basis to ascertain the health of the vendors.

At both restaurants, that is the organized and casual restaurant, they all are aware and do participate in the screening exercise.

Majority of about 80% of the respondents interviewed said they had never had training on food hygiene ever since they operating the restaurants. Meanwhile, 8 of the respondents from the organized restaurants said they have had training and this was done by the Food and Drugs Authority once in a year.

This result is similar to a study conducted in the Sunyani municipality which also showed that majority of about 85% of the respondents had not attended any training on food hygiene with 15% having been trained on personal and food hygiene.

It can therefore be said that the institutions mandated to see to it that these vendors have had training on food handling and preparation are therefore failing the citizenry and putting their health at risk.

By the law of the country, Food and Drugs Authority and the Environmental Health Unit of the various Assemblies in the country have the mandate to offer this education but it's almost obvious that is not done.

Powell (1997) in his study showed that knowledge in food hygiene practices leads to increased knowledge in food safety and proper food handling behavior hence it is important for these vendors to undergo training on food hygiene practices.

The respondents interviewed also had only 15% from the organized restaurants who said they had an idea about Food and Drugs Act regarding food safety with the remaining 85% respondents not having any idea about any law regarding food handling and safety rather they had an idea about diseases associated with improper food handling.

This supports a study conducted in the Philippines which revealed that the food vendors had knowledge in food safety and no knowledge in food legislation and waste management.

These food vendors operate without knowing that there are laws which goes with their kind of chosen profession.

In most cases when people are aware of a law regarding their activities which when they go against could lead them to some punishment, they are careful of their activities and therefore try to abide by them.

5.1.4 Institutional Set-Ups Governing Safe Practices of Food Vendors.

The respondents interviewed said that the Environmental Health Officers of the Ningo Prampram District Assembly do come on a regular visit to their premises to conduct inspection meanwhile at the organized restaurants the respondents said they do have visitors from the Food and Drugs Authority visiting them to conduct inspection.

The public health Act 851 of 2012 mandates public health and environmental health officers to ascertain the health conditions of environment where food are prepared and served.

The 1993 Local Government Act 462 permits local assemblies to enact byelaws permitting or prohibiting certain activities within their jurisdiction and also authorizes the officers to enter into premises including eateries to ascertain the conditions.

Also the Food and drugs law (PNDC Law 305), amendment Act 523(27), section 286 of the Criminal Code 1960(Act 29) of the republic of Ghana are some laws which mandates

public officials to enter into premises to ascertain their conformity to health and good living standards.

It is therefore good to know that these public officials are up to their duties within their respective jurisdictions. This would help to ensure some safe food handling measures at the food preparation premises.

The respondents said that during their visit the officers inspect their environs where the food is prepared and served and also check if they medically certified to sell food to the public by checking their medical certificates. Some of the respondents said the officers check their clothing and their dressing.

When one is found with an offence, majority (60%) of the respondents said that they are issued with a warning notice and 30% said that they are fined by the officers.

The public officer's efforts are quite encouraging since these measures are going to help with the issues of hygiene practices among food vendors in the Prampram Township and the country as a whole and also help prevent some food borne diseases in the country.

5.2 Conclusion

Based on the results and discussions the following conclusions were drawn.

1. All the respondents interviewed have attained some level of education and from the start can read and write
2. The respondents have some little knowledge on basic food safety measures despite they not having any training by any organize officials on food safety and food hygiene practices.
3. Most he respondents interviewed are within their youthful age.

4. There were no much difference with what goes on at the casual restaurant and what is done at the organized restaurants.
5. Both restaurants had hand washing facilities and sanitary conveniences at their premises for both the workers and the consumers who visit the place.
6. The institutions tasked to ensure that food premises are clean and also food preparation are being done under conducive environments do not really discriminate on their choice of place to visit since the study showed that at all levels the health officials visit them to ascertain what goes on there.

5.3 Recommendations

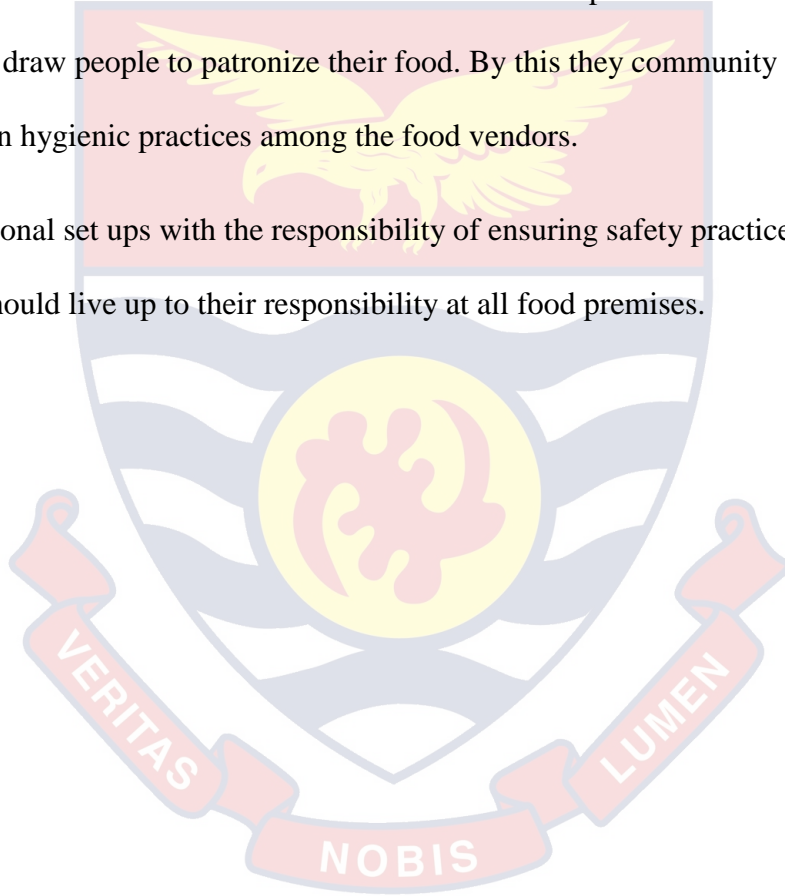
Based on the findings gotten from the research work conducted, the following recommendations are made on assessing the level of hygiene practice among organized and casual restaurants in the Prampram Township.

- 1) At all restaurants, both the organized and the casual restaurants, the vendors should be given training on hygiene practices and food safety measures to equip the vendors. This should be a requirement before one is given permit and medically certified to sell to the public. The training should also be done on regular basis to help improve upon the services of the vendors.
- 2) The training should be organized by the Health officers of the district and where possible should be made free and attractive enough to encourage the vendors to participate in it. The vendors should be sensitized to understand the importance of it and not see it as just some mere formularies which they have to follow whenever time for

them to participate is. By this they will be conscious enough to put what they learn into practice.

3) The entire community should also be educated on the need to look out for places which are sanitary clean and where the vendors prepare and serve food under hygiene conditions before patronizing their food. This will also serve as a check on the vendors since they would have been made aware that when their premises are not hygienic it would not draw people to patronize their food. By this the community would also help improve on hygienic practices among the food vendors.

4) Institutional set ups with the responsibility of ensuring safety practices among food vendors should live up to their responsibility at all food premises.



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QUESTIONNAIRE FOR FOOD VENDORS

This instrument seeks data on the hygienic practices of the food vendors in the Prampram township for an academic study. Please answer as candidly as you can.

CHARACTERISTICS OF THE BUSINESS

Type of outlet a. Casual restaurant b. Organized restaurant.

SECTION A: DEMOGRAPHICS

1. Gender

a. Male b. Female

2. Age

a. 10-20 b. 21-30 c. 31-40 d. 41-50

3. Level of education

a. Basic b. Secondary c. Tertiary d. Vocational

4. Religion

a. Christian b. Muslim d. Traditionalist e. Others specify

5. Marital status

A Married b. Single c. Divorced d. Widowed e. Separated

SECTION C: FOOD HYGIENE PRACTICES

6. What is your reason for vending food?

a. Earn a living b. learnt the profession. c. to save money d. others specify

7. How did you acquire your knowledge on food preparation?

a. From relatives b. Self-taught c. Catering school

d. Others, specify

8. What do you consider before you select food stuffs?

a. Cost b. Quantity c. Quality d. Cultural background e. None of the above

f. Specify if others _____

9. What do you physically look out for on the food stuffs before purchasing them?
- Worms
 - Rotten parts
 - Tender parts
 - Color of the fruits and vegetables
 - Appearance
 - Size
 - Others specify
10. Where do you buy your meat and animal foods from?
- Meat shop
 - Abattoir
 - Cold store
 - From open market
 - Others, specify
11. What do you look out for before buying meat for food preparation?
- Redness or color of the meat
 - Smell of the meat
 - Darkened and soft spots
 - Texture of the meat
 - Others, specify
12. What do you look out for that prevent you from buying a meat for food preparation?
- Appearance
 - Color of the meat
 - Texture of the meat
 - Others specify
13. Where do you prepare your food before selling?
- At the selling place (open space)
 - At selling place (enclosed kitchen)
 - At home (open space)
 - At home (enclosed kitchen)
14. Who prepares the food?
- self
 - Formally trained caterer
 - a relative
 - Others, specify _____
15. How do you transport foodstuff to cooking site?
- By carrying
 - By car
 - By carriage truck
16. Where do you store cooked foods?
- In an open plastic bowl
 - In an ice chest
 - In a saucepan
 - In a plain rubber suck
 - Specify if others _____
17. How do you treat leftover foods?
- Consume by self and family
 - Discard as waste
 - Reheat for sale the next day
 - Others, specify
18. Where do you get water for your food preparation and serving?
19. How do you store your water?
- In a tank
 - In a barrel
 - In a bucket with cover
 - Others specify

20. How often do you wash your plates?
a. At the end of the day b. After each use.
21. How often do you change the water for washing plates within the period of sales?
22. How many hand washing facilities do you have?
23. How often do you clean your hand washing facility?
24. How many sanitary conveniences do you have?

SECTION D: KNOWLEDGE AND TRAINING ON HYGIENE PRACTICES

25. How often do you go through medical examinations?
a. Once every year b. Twice a year c. Every quarter d. Have never undergone screening
When was the last time you underwent such medical examination?
a. A year ago b. Six months ago c. Three months ago d. Yet to undergo
26. How often do you undergo training on food hygiene practices?
a. Once every year b. Every six months c. Every quarter d. Every month e. Never had training
27. Which institution gives you the training?
a. Food and Drugs Authority b. Environmental Health Officers c. NGO d. Others specify
28. Is the training for free or you pay for the training?
a. It's for free b. We pay an amount
29. What laws do you know with regards to food safety and food handling?
a. Food and Drugs Act b. Public health Act c. None d. Others specify
30. What are some of the diseases associated with improper food handling?
a. Typhoid b. Cholera c. Diarrhea d. Hepatitis A

SECTION E: INSTITUTIONAL SET-UP GOVERNING SAFE PRACTICES OF FOOD VENDORS;

31. How often do sanitary inspectors visit your regularly place?

a. Everyday b. Every month c. Every quarter d. Every six month e. Once a year f. they have never visited

32. How often does food and drugs board inspectors visit your place?

a. Everyday b. Every month c. Every quarter d. Every six-month e. Once a year f. they have never visited

33. How many minutes does it take for inspectors to go through one inspection session?

a. Five minutes b. Ten minutes c. Thirty minutes d. One hour

34. What does the inspection team inspect?

a. The environs b. The cooking ware c. The professional certificate of vendors and helpers

d. The foodstuffs e. The protective ware

35. What are the punishment issued by the inspection team when found with an offence?

a. fine b. A warning issued c. Invitation to train in a sanitation programme

d. Nothing done e. Others, specify

36. Are you a member of any Work-Group Association?

37. If yes, does the Association ensure that you practice safe and hygienic food handling practices?

38. If, yes how do they ensure this monitoring duties are effective?

a. Assigning inspectors to visit vending sites b. Obtaining reports on the vending sites

c. Organizing training programmes for vendors d. Others, specify

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FACULTY OF DEVELOPMENT STUDIES

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Programme of Study: MSc. Environmental Health and Sanitation

Topic: Assessing Hygiene practices among casual and organized restaurant operators in Prampram.

Name of Student: Sylvia Lamptey

Student's ID: 1803006

RESPONSE MEMO

NO	COMMENTS	STUDENT'S RESPONSE TO COMMENTS
EXAMINER		
Suggested corrections in thesis in red pen		
1.	Abstract <ul style="list-style-type: none"> The abstract needs to be improved by revealing the key findings for specific objectives instead of the demographics. 	<ul style="list-style-type: none"> Abstract has been improved by revealing the findings of the specific objectives.
2.	CHAPTER ONE <ul style="list-style-type: none"> The statement of the problem can be improved by justifying why there is the need to focus on organized and casual operators but not just only one of them. 	<ul style="list-style-type: none"> Statement of the problem improved.
3.	CHAPTER FOUR <ul style="list-style-type: none"> Provide findings for second objective. Reframe objective one to suit the finding provided. 	<ul style="list-style-type: none"> Findings for second objective provided. Objective one has been reframed to suit the findings presented.

Declaration by Candidate:

I declare that I have attended to and incorporated the comments made by the examiner in the dissertation.

Name of Student: Sylvia Lamptey

Signature:

Date:.....

Approved by:

Name of supervisor: Dr. Edward Wiafe

Signature:

Date:

