INFLUENCE OF SELECTED FACTORS ON IMPLEMENTATION OF HACCP SYSTEM IN RESTAURANTS IN EASTLEIGH TOWN

ABDIRAHMAN ALI MOHAMUD

BUS 4-2984-19

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELOR OF COMMERCE IN BUSINESS ADMINISTRATIO OF GRETSA UNIVESITYY
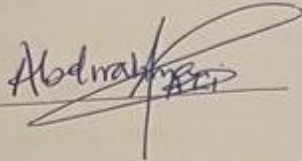
JULY 2021

DECLARATION

This project is my original work and has not been presented for a degree in any other university.

Abdirahim Ali Mahamud

Bus-4-2984-19

Signature _____   Date ___8-12-121___

Supervisor:

This project has been submitted for the review with my approval as a University supervisor.

Date ___8-12-21___

Signature _____

Madam Florence kaku

School of Business

Gretsa University

TABLE OF CONTENTS

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

FAO -Food and Agriculture Organization

GHP -Good hygienic Practices

GMP - Good Manufacturing Practices

HACCP -Hazard Analysis Critical Control Point

SSOP - Standard Sanitation Operating Procedures

WHO - World Health Organization

OPERATIONAL DEFINITION OF TERMS

HACCP System   is a food safety management tool internationally recognised to address food safety problems through critical analysis and control of biological, chemical and physical hazards.

Implementation   it refers to the application of the HACCP system in urban restaurants in Eastleigh

Selected factors   refers to particular components influencing implementation of HACCP System and in this case the selected factors are restaurant management commitment, government policies and regulation and restaurant workforce.

ABSTRACT

The implementation of HACCP is the most secure and cost-effective method for controlling hazards during food production. This, in turn, enhances food safety, business success and excellence and promotes trade by increasing food safety and overall quality assurance. This study purposes to examine the influence of selected factors on the implementation of the HACCP system in restaurants. Specific objectives of the study will assess how the restaurant management commitment influences implementation of HACCP system in a restaurant, examine how government regulation and policies influences implementation of HACCP system in a restaurant and to find out how restaurant workforce influences the implementation of HACCP system in a restaurant. The expectancy disconfirmation theory will be used. The study will adopt a descriptive survey design. This study will be located in Eastleigh town. A sample size of thirty restaurants will be incorporated. The questionnaire will be used to collect primary data. Piloting of the questionnaire will be done to enhance reliability and validity. Data collected will be analyzed quantitatively and presented in frequency tables. This study will inform the policymakers and in particular the restaurant managers and Eastleigh County Health department in understanding the implementation of the HACCP system in restaurants.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The Hazard Analysis Critical Control Point (HACCP) concept got its origin in the USA. The concept was first developed by National Aeronautics and Space (NASA) in 1958, and in 1959, the concept was further developed to assure 100% safety of food used in space (Semos, and Kontogeorgos, 2017). In 1971 HACCP system was published and documented in the USA. The National Academy of Science (NAS) recommended the use of the HACCP system in 1985, and finally became a global food safety management tool and cited in the Food and Agriculture Organization (FAO) /World Health Organization (WHO) Codex Alimentarius system. During 1980, WHO / International Commission on Microbial Specifications for Foods (ICMSF) report on HACCP as an international system of choice in food safety management, and, a number of publications were instrumental in making HACCP the predominant Food Safety Management System (FSMS).

HACCP is a food safety management tool internationally recognised to address food safety problems through critical analysis and control of biological, chemical and physical hazards from the points of receiving raw materials, production, processing, distribution, storage, and to the final consumption (Early,2013).

The implementation of HACCP is the most secure and cost-effective method for controlling hazards during food production (Arvanitoyannis & Efstratiadis, 2012). This, in turn, enhances food safety, business success and excellence and promotes trade by increasing food safety and overall quality assurance (Codex, 2008). The major cost of implementing HACCP is staff time but costs of capital investment and technical expertise are less important compared to important benefits it provides in protecting public health and sustaining consumer confidence nationally and internationally (Semos & Kontogeorgos, 2017).

The adoption and implementation of the HACCP system require other programmes including Good Manufacturing Practices (GMP), Good hygienic Practices (GHP) and Standard Sanitation Operating Procedures (SSOP) (ISO, 2005). HACCP is an internationally recognized and widely implemented new food safety management system that seeks to identify the different potential hazards from the point of production to the final consumer (Kane and Taylor, 2015). It has several advantages over the traditional end-product testing method due to its preventive control functions in the inspection and elimination or reduction to an acceptable level of potential food safety hazards (Kane and Taylor, 2015). The

underpinning principle of adoption and implementation of HACCP is to stimulate improvement in food safety practices by setting public health-oriented targets, standards, specifications, policies, regulations, guidelines, codes of practice, innovation and changes that all food businesses must meet (Ramnauth & Driver, 2008).

The significance of food safety for any nation cannot be overemphasized (Vladimirov, 2011). Food security for any nation could be viewed as when everyone in that country has full access to sufficient, safe, wholesome, and nutritious food (Srinivasan, Cheung et al., 2010). Ensuring sustainable food safety would eliminate or reduce foodborne illnesses that contribute to decreased worker productivity, disability, early death, lowered incomes, and denial of full access to food. The proper prevention of foodborne illnesses in Sierra Leone could reduce human suffering in a country that is currently going through a difficult post-war era. It would prevent the high incidence of diarrhoea and other foodborne-related diseases in school children, pregnant women, the aged, and other immunodeficient populations in the country. In a country where the food safety management system has almost collapsed, food insecurity spreads more rapidly (Unnevehr, 2007).

In Kenya, there is Food, Drugs and Chemical Substances Act CAP 254 of 1992 and Public Health Act CAP 242 of 1986 of the Laws of Kenya which deals with public protection on food safety and sanitation (GoK, 2005). New challenges to Kenya food supply have prompted public health authorities to consider adopting a HACCP- based food safety system on a wider basis, because of the increasing number of new food pathogens (WHO, 2005). Nearly 50% of the Kenya urban populations live in unplanned low-quality settlements having no access to infrastructure and other services. In developing countries, it has been suggested that lack of knowledge and skills on the GMPs, have contributed to poor hygienic practices in foodservice establishments.

The Eastleigh County health department has increased its surveillance after four people died after eating at a ceremony at eastleigh, Nairobi constituency (Mugo, 2019). Mugo (2019) also stated that residents who attended the ceremony trooped to hospitals exhibiting cholera-like symptoms. The food was outsourced from Kitengela in Kajiado County for the event attended by more than 250 guests from Eastleigh and Nairobi counties.

1.2 Statement of the Problem

Okeyo (2017), confirmed that 11 out of more than 30 patients who had been rushed to hospitals after taking lunch at the Weston Hotel had indeed, contracted the gastroenteritis as a common food-borne disease. Those admitted to various private hospitals complained of severe diarrhoea and vomiting. According to Muchangi (2019), a wedding turned tragic after one family member died and more than 40 guests fell ill from food poisoning and cholera. He further asserts that at least 10 guests and family members were admitted in various Nairobi hospitals after testing positive to cholera. The food for a total of 450 guests was supplied with Hot Dishes by a Nairobi-based restaurant with outdoor catering services. The food consisted of vegetable salad, mixed vegetables, vegetable rice, beef, mukimo, njahi, rice and chapati among other dishes all at Sh184,000. On 23rd April 2019, the Eastleigh County Health department banned food hawking following cases of cholera outbreaks in several counties in the country. It also ordered the re-inspection of food outlets in the county to ensure conformity with the Public Health Act (Mugo, 2019). Therefore, this study aims to assess the influence of selected factors on the implementation of the HACCP system in restaurants in Eastleigh town.

1.3 Purpose of the Study

The study will examine the influence of selected factors on the implementation of the HACCP system in restaurants in Eastleigh town.

1.4 Objectives of the Study

1.4.1 General Objective

To investigate the influence of selected factors on the implementation of the HACCP system in restaurants in Eastleigh town.

1.4.2 Specific Objectives

1. To assess how the restaurant management commitment influences the implementation of the HACCP system in the restaurant.
2. To examine how government regulation and policies influence the implementation of the HACCP system in the restaurant.
3. To find out how the restaurant workforce influences the implementation of the HACCP system in the restaurant.
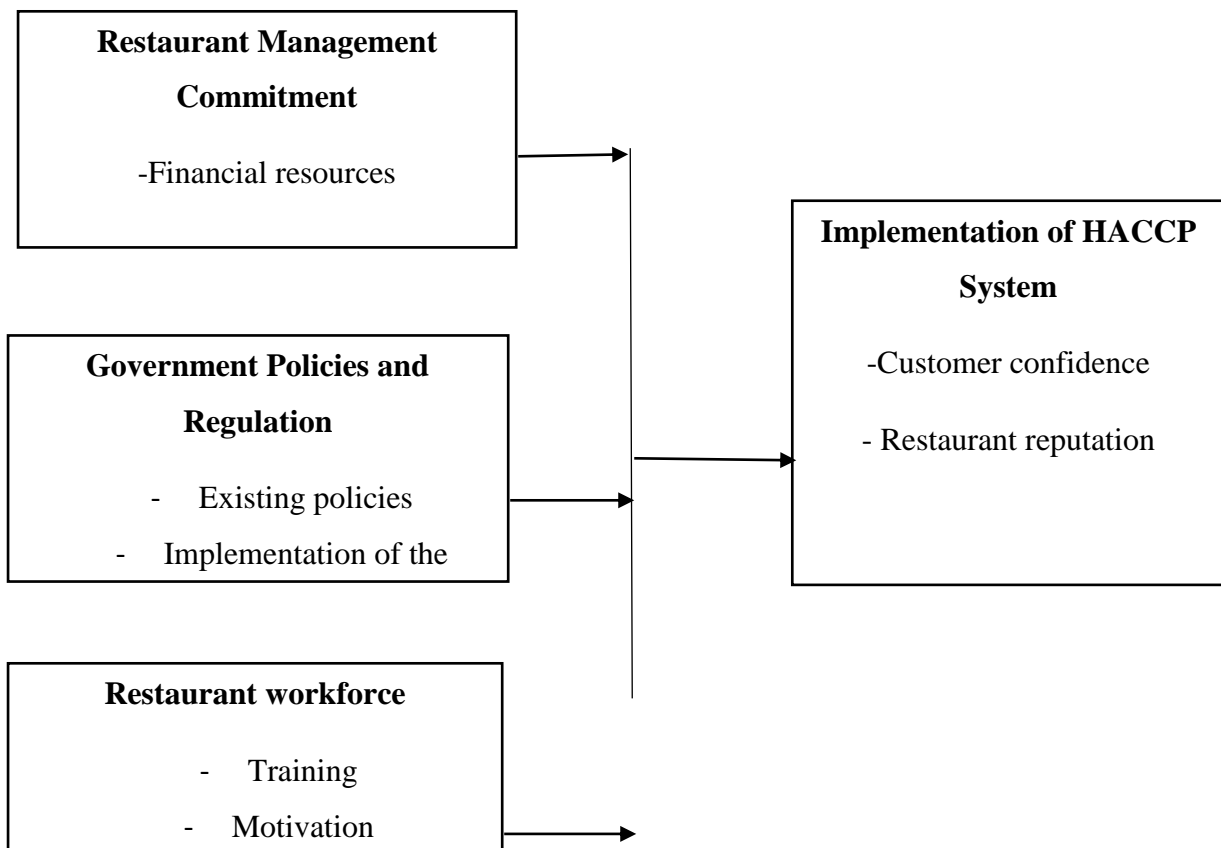
1.5 Research Questions

1. How does the restaurant management commitment influences implementation of HACCP system in the restaurant?
2. How do government regulation and policies influences the implementation of the HACCP system in the restaurant?
3. How does the restaurant workforce influences implementation of HACCP system in the restaurant?

1.6 Conceptual Framework

Independent variables   **Dependent Variable**

```
┌─────────────────────────────┐
│  Restaurant Management      │
│  Commitment                 │
│                             │
│  -Financial resources       │
└─────────────────────────────┘
                                          ┌──────────────────────────┐
                                          │  Implementation of HACCP │
┌─────────────────────────────┐          │  System                  │
│  Government Policies and    │          │                          │
│  Regulation                 │          │  -Customer confidence    │
│                             │          │  - Restaurant reputation │
│  -   Existing policies      │          └──────────────────────────┘
│  -   Implementation of the  │
└─────────────────────────────┘

┌─────────────────────────────┐
│  Restaurant workforce       │
│                             │
│  -   Training               │
│  -   Motivation             │
└─────────────────────────────┘
```

Source: Researcher (2019)

Figure 1: Conceptual Framework

1.7 Justification and Significance

Customers visit a restaurant mainly for breakfast, lunch and supper. Though there are other instances customers go to the restaurant in any hour of the day. Food becomes the main priority for customers visiting a restaurant. Food that is well prepared and customers visiting regularly with no complaint of food served to them, boost the confidence of customers visiting the restaurant. In 2019, there are reported instances of customers eating contaminated food in restaurants in Nairobi and Kiambu. In Eastleigh, there was a situation of foodborne illness and several people died. This led to Eastleigh County Health department order for re-inspection of food outlets and mainly the restaurants.

This study will be significant to the policymakers and in particular the restaurant managers and Eastleigh County Health department. It will help in understanding the influence of selected factors on the implementation of the HACCP system in restaurants in Eastleigh town.

The study will contribute to growing literature on HACCP system and help future researchers while reviewing literature in the related topical issue.

1.8 Scope and Limitation

This study will focus on the influence of selected factors on the implementation of the HACCP system in restaurants. The selected factors will entail restaurant management, government regulation and policies and restaurant workforce. It will be confined in Eastleigh town. The study will adopt a descriptive survey design. A sample size of 30 restaurants will be used.

The respondents might reluctantly fear to provide data as it can be used against them. The researcher will assure respondents for the confidentially of their response and anonymity while providing data. The researcher will have an introduction letter revealing the name, purpose of study, institution and guidelines for the respondents.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews related literature on the influence of selected factors on the implementation of the HACCP system in restaurants guided by the conceptual framework. The independent variables to be reviewed will be restaurant management commitment, government regulation and policies and restaurant workforce. Dependent variable to be discussed will be the implementation of the HACCP system.

2.2.1 Restaurant Management Commitment

Yapp and Fairman (2014), posit that implementation of HACCP impeded by internal budgetary constraints, problems obtaining external funding, current food safety controls considered sufficient, lot of changes to restaurant production processes needed before HACCP could be put in place. The things needing to be done to implement HACCP overwhelmed restaurant, other investments considered more important, lot of changes to restaurant food safety controls needed before HACCP could be, wide-scale upgrading of the plant needed before HACCP could be put in place put in place.

The scale of operation is too small to have, not sure whether the implementation of HACCP would meet future regulatory requirements, uncertain about the potential benefits of implementing HACCP. According to Vela and Ferna´ndez (2013), argue that HACCP is difficult to implement because of the internal organization of the restaurant, concerned that HACCP would reduce restaurant flexibility in production, thought it best to wait and see the experiences of other restaurants before implementing it. Vela and Ferna´ndez (2013), did not really see HACCP as suitable for restaurant plant, not sure whether the implementation of HACCP would meet restaurant customer's requirements, considered that costs of implementing HACCP likely to get cheaper over time, greater priority given to other issues than enhancing restaurant food safety controls. The food safety issues not considered sufficiently important to warrant the investment; HACCP goes against all of the ways in which restaurant have traditionally done things (Yapp & Fairman, 2014).

Clayton, Griffith, Price, and Peters (2012), researched on food handlers' beliefs and self-reported practices. According to their study, in the short term, there is a lack of correlation in the market requirements for food safety and price improvement hence the cost-effectiveness did not always prove positive to the enterprise implementing HACCP. Lack of financial resources was identified to devote to food safety was the biggest resource barrier for

restaurant management. Gilling, Taylor, Kane and Taylor (2011), foodservice managers identified the time to establish a HACCP program, time to run the program, and labour costs as being the three biggest obstacles to implement the HACCP system. The cost of implementing HACCP and its PRPs has been identified as a major barrier in the food businesses by other HACCP studies. The Managing Directors (MDs) wanted the HACCP but they cannot afford to pay the staff for extra hours to attend HACCP meetings (Taylor and Kane 2015). Structures and materials such as the handwashing basins, sinks, gowns, safety boots, cutting boards, chemicals, types of equipment, and other personal protective equipment (PPE) which are needed to buy or change are yet visualized (Taylor and Kane 2015).

In addition, lack of training funds, time to get used to running the HACCP program, and union problems were the other identified obstacles. There is a big confusion between prerequisite programs and HACCP plan, their relations and how they should be managed. The main barrier to implementing a HACCP based food safety management system was the lack of prerequisite programs (Vela and Ferna´ndez, 2013).

Before implementing HACCP, basic food hygiene conditions and practices (requirements/prerequisites) must be in place in a food catering setup. HACCP will then be used to manage steps in the catering businesses which are critical in ensuring the preparation of safe food. Prerequisites include where appropriate: cleaning and sanitation, maintenance, personnel hygiene, pest control, plant and equipment, premises and structure services (compressed air, ice, steam, ventilation and water availability). In addition, it involves distribution and transport waste management zoning (physical separation of activities to prevent potential food contamination) (Food Safety Authority, 2008).

For a HACCP programme to be successful, management must be committed to the systems which indicate an awareness of the benefits and costs of the system which includes education and training of the employees (Muinde, 2010).

2.2.2 Government Policies and Regulation

The main aim of the food safety legislation is to guarantee a high standard of public health protection, by ensuring food safety and overall quality assurance and that the consumers are sensitized, guided and adequately informed of the nature, type and intended use of food products and, where appropriate, the source of origin of the food product (MacMaolain,

2017). There are different procedures for implementation of Kenyan Directive and Regulation.

Kenya has developed several legislations and has covered many products such as fishery products; fresh red meat; poultry and poultry products; eggs; milk; general food hygiene; and so on (Okoth, 2013). The most popular legislation in this study is the regulation on the hygiene of foodstuffs and laying down the health conditions for the production and the placing on the market of food products. The adoption and implementation of this regulation have served as springboards in the development of Kenya food law and served as a guide for general food hygiene control. Interestingly, Kenya has circulated many directives through the gazette notice for each category of food products, and the good thing is that most of the legislation is reviewed regularly and amended in order to be compatible with the challenges of new and emerging food safety hazards, based on evidence of modern science and technology.

HACCP implementation requires a complex interrelation among governments, industry and consumers but unfortunately, this responsibility is not always accomplished. Lack of awareness among consumers, lack of trust in food safety legislation and enforcement officers are some of the common issues.

Several developing countries have no food law and therefore general food safety and quality assurance activities are seriously fragmented (Dey & Rab, 2015). Their food safety and quality assurance activities remained far below the international standard. The HACCP system must be developed by each food establishment and tailored to its individual product, processing and distribution conditions (WHO, 2005). The Codex Alimentarius Commission (2011) and its subsidiary bodies have discussed the need for a code of hygiene practices for street foods and restaurants. The Ministry of Health and major local authorities have put very few policies in place to ensure that the risk of disease communication is contained and food safety is enhanced (FAO, 2005). For instance, they have tended to rely on legislation that seeks to provide a framework for food safety inspection which, unlike a HACCP system, is not proactive and preventive.

The Foods, Drugs and Chemical Substance Act, cap 242 of Kenya, may not provide an adequate supervisory framework for food establishments that clearly need to improve on their efforts to enhance product quality (GoK, 2004). The introduction of a HACCP system could improve and reduce the incidence of food poisoning in urban restaurants. It can also aid

inspection by regulatory authorities and promote international trade by increasing confidence in food safety. It provides a more specific and critical approach to the control of microbiological hazards in foods than that provided by traditional inspection and quality control approaches (Amref, 2010).

2.2.3 Restaurant Workforce

Savovic and Curcic (2017), the value of the HACCP system in restaurants that serves and sell food is the employee that works with food. Employees need to be motivated to work in compliance with applicable regulations in the area of hygiene and food safety. Essential training and ongoing training are very important to staff working with food. According to Clayton and Griffith (2008), note some challenges in implementation of HACCP system in restaurant such as huge labour turnover, varying degree of education and habit of the people who work with food, huge manual work and lot of staffs working in kitchen, large number of suppliers, and recipes, combination of several technological procedures food during food preparation, use of various raw materials for plant and animal origin and finally various ways of serving and presenting food.

According to Ball, Wilcock and Aung (2009), resource management, employee motivation, and employee confidence are the key barriers. Employees are nervous about taking food safety certification examinations and often are not comfortable with the change needed for implementation of a program like HACCP. Various studies have shown socio-psychological factors, other psychological barriers such as lack of agreement and lack of self- efficacy to influence the implementation of HACCP programs. Similarly, attitude barriers due to a lack of educative courses, sessions or meetings, make it more difficult for workers to adhere to this system (Hinsz, Nickell, & Park, 2007; Taylor, 2008).

According to Ball, Wilcock and Aung (2010), knowledge of the staff is important for implementation. They found out that 46.6% of respondents claimed to have a good knowledge of HACCP while 6.6% admitted to having poor knowledge of HACCP system. Herath and Henson (2010), demonstrate that an increase in the knowledge of a food handler does not necessarily change their food handling behaviour and is dependent upon their attitude. The constant turnover of employees was also identified as a barrier.

Effective and relevant food hygiene training delivered with the support of the organization, adequate resources and the peer support of the colleagues will have a greater effect on

intention and the actual behaviour of the food handler, increasing the likelihood that safe working practices are carried out all times. Such approaches are necessary if hygiene training is to have an impact on food safety management (Seaman & Eve, 2015). Sunny and Sun (2016) assert that there is an immediate need for education and increasing awareness among food handlers regarding safe food handling practices.

2.3 Implementation of the HACCP System

In the quotation of Jean Anthelme word, "Tell me what you eat and I will tell you what you are," These words delineate the significance of food in our lives. For human beings to lead a healthy life, the food one eats plays a vital role and it is thereby essential to ensure that the food we consume is safe and hygienic. The underpinning principle of adoption and implementation of HACCP is to stimulate improvement in food safety practices by setting public health-oriented targets, standards, specifications, policies, regulations, guidelines, codes of practice, innovation and changes that all food businesses must meet (Peter & Zollers, 2014).

According to Eves and Dervisi (2015), on benefits and weakness of the implementation of HACCP in food sector found out that some weakness were challenges of identifying hazards, inadequate knowledge, time-related issues related to monitoring and recording, excessive documentation, the convincing staff of the importance of the system, and increased costs. Eves and Dervisi (2015), also noted perceived benefits which were protecting the restaurant from otherwise unforeseen problems and providing evidence of due diligence.

The several food hazards encountered since the beginning of the 90s, have shaken consumers and drew their attention to the importance of food's traceability. Food safety issues often result from the asymmetric information between consumers and suppliers, with regards to product-specific attributes (Ortega, Wang, Wu & Olynk, 2011). Consumers seek for high-quality food products and they infer this quality based on a certain group of indicators, or attributes, that are classified according to the degree of visibility, namely: search, experience, and credence attributes. More particularly, credence attributes are those that consumers can't ever evaluate with confidence but basing on consumers' opinions with regards to the product itself or the producer, even after consumption (Verbeke & Ward, 2016).

Nowadays, to define food products' quality, consumers evaluate both intrinsic features of the product and external features, such as traceability, origin (COO), geographical indications and certification (Mascarello, Pinto, Parise, Crovato, Ravarotto, 2015), and then choose

foodstuffs according to elements that may characterize the product itself. The food label encloses a set of information that conveys to consumers the product's characteristics, this information can influence consumer' purchase behaviour. With this HACCP system of rules, it is possible to improve food safety and enhance consumer confidence, in addition to giving a higher value to foods, through the label which provides search, experience and credence information (Holm & Kildevang, 2014).

2.4 Theoretical Framework

2.4.1 The expectancy disconfirmation theory

The expectancy disconfirmation theory is one of the most popular and widely accepted ways to assess customer satisfaction in the service industry (Oh, 1999). According to the expectancy disconfirmation theory customers form an opinion about a given service by comparing the actual service encounter with the expectations that a customer had of how the service provider should have performed the service (Oliver, 1980). When a customer's perception of a given service encounter exceeds the expectations of the customer for that encounter, the result is customer satisfaction (Oliver, 1980; 1981).

Perceived quality is the gap that exists between a customer's perception and the expectation of the service encounter (Parasuraman et al., 1988). When a customer's perceptions exceed their expectations, a positive disconfirmation occurs. When a customer's perception is below their expectations, a negative confirmation occurs, and when the perceptions of a customer equal their expectations then a zero disconfirmation occurs (Weiss, et al. 2004).

Oliver (1981) proposes a model where customer satisfaction was determined by differentiating between customers' perceptions and their expectations. In Oliver's model, customer satisfaction is viewed as an emotional state. This emotional state occurs when a customer experiences a positive disconfirmation of their expectations during a purchasing encounter. Oliver (1981) argued that three things are possible in a given purchase situation. A positive confirmation will occur when the purchase experience exceeds the consumer's expectation of the event; a negative disconfirmation will occur when the purchase experience is not exceeded by the customer's expectation; and a zero disconfirmation or confirmation will occur when the purchase experience meets the customers' expectations (Oliver, 1981).

The customer satisfaction model of Olivier applies to the retail setting to uncover potential behavioural outcomes of customer satisfaction and customer dissatisfaction. Oliver's model shows that customers enter a retail environment with a number of pre-patronage expectations.

When the person's expectations are met, these expectations are positively disconfirmed, and when not met then they are negatively disconfirmed.

These disconfirmations provide a basis for determining customer satisfaction and dissatisfaction. The possible behavioural outcome of customer satisfaction in a retail environment is a repeat purchase and or store loyalty, whereas the possible behavioural outcome of customer dissatisfaction would be a customer engaging in a complaint (Weiss et al., 2004). Research on consumer satisfaction and dissatisfaction rests on the basic assumption that the extent of confirmation and or disconfirmation of the pre-purchase quality expectations will determine whether or not consumers are satisfied and whether or not there will be repurchase probabilities (Oliver, 1980).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter will focus on research design, study area, target population and sample size and sampling technique. It will also discuss the reliability and validity of the instrument, data collection technique and data analysis. It will further highlight ethical consideration.

3.2 Research Design

The study will use a descriptive survey design. A descriptive survey describes the state of affairs of an occurrence as it exists. In this study, the researcher will describe the influence of selected factors on the implementation of the HACCP system in restaurants in Eastleigh town. Mugenda and Mugenda (2003), a survey is an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables. The study will use a questionnaire to collect data.

3.3 Study Area

The study will be located in Eastleigh town. Eastleigh town is in Eastleigh town constituency and headquarters to Eastleigh county. Eastleigh town has various notable restaurants that are frequently visited by customers.

3.4 Target Population

Best and Kahn (1986), assert that a target population is an entire group of individuals or objects to which a researcher is generalizing the conclusions. The study targets registered restaurants within Eastleigh town. Eastleigh town has 60 registered restaurants which will be the target population.

3.5 Sample Size and Sampling Technique

According to Mugenda and Mugenda (2003), a target population that is less than 1,000, a sample size of at least 10-50% can be used. In this case, a sample size of 50% of the target population will be used. A sample size of 30 restaurants will be used. The study will employ a simple random sampling technique. It will give each respondent an equal chance of being selected to participate in the study.

3.6 Reliability and Validity of the Instrument

Reliability of the instrument is the degree to which an instrument measures the same way each time it is used under the same conditions with the same subject. Test-retest technique will be used to determine the reliability of the researcher devised instrument to five

respondents. In this test-retest technique, questionnaires will be administered twice to the same subjects.

The validity of the instrument is the accuracy, clarity, soundness, suitability, meaningfulness and technical soundness of the research instrument. Research instrument will be questionnaire. It will be given to the supervisor for review. Supervisor recommendations will be factored in. Piloting will be done to validate the questionnaire.

3.7 Data Collection Technique

The researcher will rely on primary and secondary data. Primary data will be collected from the field of the study using a questionnaire from willing respondents. The questionnaire will be in close-ended format. The researcher will drop the questionnaire to respondents and pick them later. Drop and pick later method will give respondent appropriate time to respond to the questions posed.

Secondary data will include reviewing related literature of what has been written by scholars. Reviewing related literature will be gathered from books, journal articles, unpublished research projects and newspapers.

3.8 Data Analysis

Collected data will be analyzed quantitatively. Primary data will be analyzed inferential statistics. Data will be categorized into themes and presented in frequency tables.

3.9 Ethical consideration

The researcher will ensure ethics are observed while collecting data. Respondents will participate in the study at their own will. Participants will have informed consent. The researcher will have an introduction letter revealing the reason for conducting this research. Data collected from the respondent will be treated with confidentiality and used for academic purposes only.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSION

4.1. Introduction

This chapter of the research addressed the findings from the conducted study, analysis as well as interpreting the data. This study aimed at analyzing the influence of selscted factors on implementation of HCCP systems in reausturants in Kenya. Primary data was collected and analyzed.

4.2. Response rate

The study involved 100 employees of reastaurants in Eastleigh town to collect data for the analysis of how the study variables. From the use of questionnaires, only 86 out of the 100 targeted employees responded and their response was good enough to draw meaningful conclusion. This therefore places the rate of response at 86% with 14% not giving their responses. The failure for response was found to be as a result of various factors such as inability to submit the questionnaires within the required period for analysis.

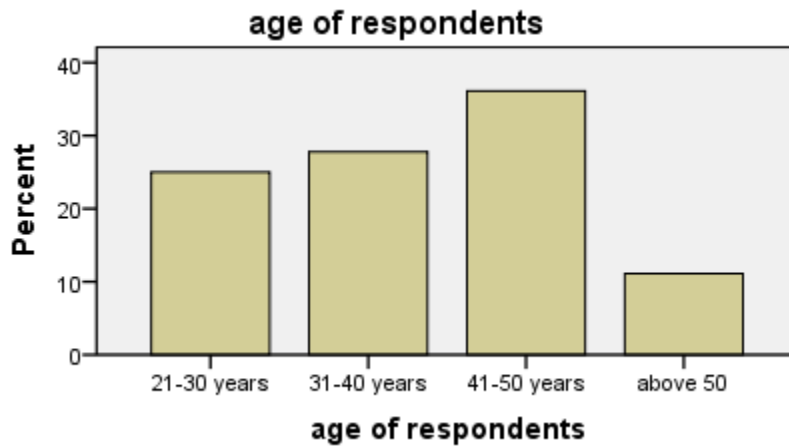### 4.3. Respondents' demographic data

4.3.1 Respondents gender

Respondent's gender was as shown below
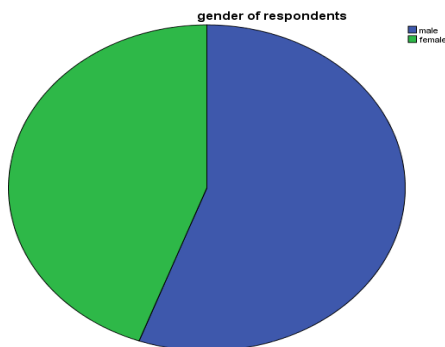
The results of the study indicated that 55.6% of the restaurants are owned and managed by men, while female made up the remaining 44.4%. This showed that more men than women are involved in the operations of restaurants in Eastleigh Town.

4.3.2 Age of respondents

Respondents of the age category of 21-30 years made up for percent of 25 it was then followed by the age category of 31-40 years which contributed to 27.8 percent. It was then followed by the age category of 41-50 years that made up of 36. 1 percent of the respondents which was the highest value and the last category of below 20 years had none of the respondents while those above 50 years made up 11.1 % of the respondents, this was the lowest age group.

4.4. Descriptive Statistics.

The study focused on finding out how selectsd factors inleuneced the implementataion of HACCP systems in restaurants. Descriptive statistics helped in summarizing the study variables and tried to establish how the study variables are related.

4.4.1 Restaurant Management

The respondents were requested to rate how restaurant management measures were practiced in the organization and their contribution towards implementation of HACCP sysytems. A scale of 1-5, was given with 1 representing strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The findings are as shown in the table below.

Descriptive Statistics

	N	Mean	Std. Deviation
We set aside finances to cater for the implementation of HACCP system in our restaurant	86	3.68	.785
Before employing staffs in our restaurant, we first test simple hygiene practices and sanitation	86	3.80	.863
We frequently update ourselves with existing and hitherto policies of Food SafetyActs and hygiene and sanitation to comply with the law	86	3.96	.932
The sanitation system is monitored for effectiveness and periodically inspected by proper cleaning of equipments	86	4.18	1.057
Valid N (listwise)	86		

Most of the respondents agreed that they set aside finances to cater for the implementation of HACCP system in the restaurants with a mean of 3.68. Again, with a mean of 3.80, most of the respondents agreed that before employing staffs in our restaurant, we first test simple hygiene practices and sanitation. We frequently update ourselves with existing and hitherto policies of Food SafetyActs and hygiene and sanitation to comply with the law, most respondents agreed to this with a mean of 3.96. The sanitation system is monitored for effectiveness and periodically inspected by proper cleaning of equipments, most of the respondents agreed with a mean of 4.18.

4.4.2 Government Regulations

The respondents were requested to rate how government regulations measures were practiced in the organization. A scale of 1-5, was given with 1 representing strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The findings are as shown in the table below.

Descriptive Statistics

	N	Mean	Std. Deviation
We regularly inspect restaurants and food outlets to ensure they comply with existing laws and regulations for consumer protection	86	3.68	.804
We have employed enough public health officers to ensure they oftenly inspect food outlets and restaurants for appropriate actions	86	3.90	.895
We secretly visit restaurant and food outlets as customers to check on the progress of HACCP implementation	86	4.24	.918
Valid N (listwise)	86		

Most of the respondents agreed that regularly inspected restaurants and food outlets to ensure they comply with existing laws and regulations for consumer with a mean of 3.68. Again, with a mean of 3.90, most of the respondents agreed that they have employed enough public health officers to ensure they oftenly inspect food outlets and restaurants for appropriate actions. We secretly visit restaurant and food outlets as customers to check on the progress of HACCP implementation, most respondents agreed to this with a mean of 4.24.

4.4.3 Restaurant Workforce

The respondents were requested to rate how restaurant workforcee measures were practiced in the organization. A scale of 1-5, was given with 1 representing strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The findings are as shown in the table below.

Descriptive Statistics

	N	Mean	Std. Deviation
I have a food safety certificate which I renew upon expiration	86	3.56	.769
I am conversant with food safety and hygiene practices in the restaurant	86	3.75	.780
The personal cleanliness is monitored on regular basis before entering into processing areas by Human Resource personnel	86	3.96	.991
Relevant training and on-going training are conducted on food safety and hygiene practices to enhance and supplement our knowledge to improve our performance	86	4.16	1.258
Valid N (listwise)	86		

I have a food safety certificate which I renew upon expiration most of the respondents agreed to that with a mean score of 3.56. I am conversant with food safety and hygiene practices in the restaurant, with a mean score of 3.75, most of the respondents agreed. The personal cleanliness is monitored on regular basis before entering into processing areas by Human Resource personnel, most of the respondents agreed to that with a mean score of 3.96. with a mean of 4.16, most of the respondents agreed that relevant training and on-going training are conducted on food safety and hygiene practices to enhance and supplement our knowledge to improve our performance

.

4.4.4 HACCP System Implementation

The respondents were requested to rate how HACCP system implementation was affected with the use of selected factors in the restaurants. A scale of 1-5, was given with 1 representing strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The findings are as shown in the table below.

Descriptive Statistics

	N	Mean	Std. Deviation
On average the restaurant has been trying to adopt HACCP system	86	3.85	.760
The restasurant implementation of HACCP system has been increasing proportionate to the use of selected factors	86	3.90	.812
Valid N (listwise)	86		

The respondents agreed that on average the restaurant has been trying to adopt HACCP system , this was evident with the mean score of 3.85 which represented in the Likert scale as agree. Most of respondents agreed that the restasurant implementation of HACCP system has been increasing proportionate to the use of selected factors with a mean of 3.90.

4.5 Regression analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.749a	.557	.594	.90585	.557	25.807	3	82	.000

a. Predictors: (Constant), Restaurant_management, Government_regulation,Restaurant_workforce

The coefficient of determination R^2, was 0.557 explaining the variation in the influence of 55.7 % selected factors has on influencing the implementation of HACCP system in restaurants in Eastleugh town. This indicates that the independent variable contributes 55.7 % to the dependent variable. Other factors that were not included in the study contribute to 44.3% to the dependent variables this calls for further research to determine the other factors that contribute to the remaining percentage.

ANOVAª

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	39.795	3	13.265	25.807	.000ᵇ
	Residual	42.021	82	.514		
	Total	81.816	85			

a. Dependent Variable: HACCP_implementation

b. Predictors: (Constant), Restaurant_management,
Government_regulation,Restaurant_workforce

Anova results indicated that the regression model had a level of significance of 0.000 that helped to conclude that the model was of significant. F value at 5% level of significance was 25.807. This indicated that the entire model was significant i.e., there was a significant relationship between selected factors and the implementation of HACCP system in restaurants in Eastleigh Town.

Coefficientsª

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-.305	.834		.476	.758	-2.239	1.506
	Restaurant_management	.508	.262	.154	1.540	.000	.410	.990
	Government_regulation	.844	.244	.590	4.660	.000	-.973	-.313
	Restaurant_workforce	.652	.197	.068	.376	.000	.652	1.164

a. Dependent Variable: HACCP_implementation

The results of the study showed that restaurant management, government policies and restaurant workforce at 95% level of confidence, had a positive relationship with implementation of HACCP system implementation. Independent coefficients were 0.508, 0.844 and 0.652 respectively.

4.5.1 Restaurant Management and HACCP System Implementation

According to the first objective, how restaurant management influence HACCP System Implementation in restaurants, the model indicated that restaurant management had a positive relationship with HACCP System Implementation in the restaurants with a beta value of 0.508, p 0.000 value of the p value was significant since it was less than 0.05 (p less than 0.05).

4.5.2 Government Regulation and HACCP System Implementation

According to the second objective, how government regulation contributes to HACCP System Implementation in restaurants in Eatleigh, the model indicated that government regulation had a positive relationship with HACCP System Implementation of the restaurants with a beta value of 0.844, p value of 0.000 the p value was significant since it was less than 0.05 (p less than 0.05).

4.5.3 Restaurant Workforce and HACCP System Implementation

According to the third objective, how restaurants workforce contributes to HACCP System Implementation in restaurants in Eatleigh town, the model indicated that restaurant workforce had a positive relationship with HACCP System Implementation with a beta value of 0.652, p value of 0.000 the p value was significant since it was less than 0.05 (p less than 0.05).

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS.

5.1 Introduction

This chapter of the study looks at the summary, the conclusion of the research and recommendations the researcher gives concerning how seslected factors influence HACCP System Implementation of restaurants in Eastleigh.

Out of the targeted 100 respondents only 86 responded and gave meaningful data thus putting the response rate at 86 %.

5.2 Summary of findings

5.2.1 Restaurant Management and HACCP System Implementation

On determining the influence of restaurant management on HACCP system implemetation, the findings of the study were that we set aside finances to cater for the implementation of HACCP system in our restaurant, before employing staffs in our restaurant, we first test simple hygiene practices and sanitation, we frequently update ourselves with existing and hitherto policies of Food SafetyActs and hygiene and sanitation to comply with the law and The sanitation system is monitored for effectiveness and periodically inspected by proper cleaning of equipments.

The findings also indicated a positive relationship between restaurant management and HCCP system implementation with a beta value of 0.508, p 0.000 value of the p value was significant since it was less than 0.05 (p less than 0.05).

5.2.2 Government Regulation and HACCP System Implementation

On assessing the influence of governemtn regulation on HACCP ststem implementation, the study findings indicated that we regularly inspect restaurants and food outlets to ensure they comply with existing laws and regulations for consumer protection, we have employed enough public health officers to ensure they oftenly inspect food outlets and restaurants for appropriate actions and we secretly visit restaurant and food outlets as customers to check on the progress of HACCP implementation

The findings also indicated a positive relationship between government regulation and HACCP system implemetation with a beta value of 0.844, p value of 0.000 the p value was significant since it was less than 0.05 (p less than 0.05

5.2.3 Restaurant Workforce and HACCP System Implementation

On assessing the influence of restaurant workforce on HACCP system implementation, the study findings indicated that i have a food safety certificate which I renew upon expiration

I am conversant with food safety and hygiene practices in the restaurant. The personal cleanliness is monitored on regular basis before entering into processing areas by Human Resource personnel, Relevant training and on-going training are conducted on food safety and hygiene practices to enhance and supplement our knowledge to improve our performance.

The findings also indicated a positive relationship between restaurant workforce and HACCP system implementation with a beta value of 0.625, p value of 0.000 the p value was significant since it was less than 0.05 (p less than 0.05).

5.3 Conclusion

The conclusion of the study was that restaurant management positively related to HACCP system implementation. This was indicated by both descriptive and regression analysis. Where restaurant management impact HACCP system implementation. Restaurant management also indicated a significant relationship with HACCP system implementation.

Again, the study concluded that government regulation was positively related to HACCP system implementation. This was indicated by both descriptive and regression analysis. Where govenrmnet regulation impact HACCP system implementation to an average extent.

Finally, the study concluded that restaurant workforce positively related to HACCP system implementation. This was indicated by both descriptive and regression analysis.

5.4 Suggestion on further studies

For basis of further understanding the topic, other variables other than those used in this study can be looked at. This study used questionnaire as the tool of data collection, other research can consider other tools like interviews as way of collecting data. Again, other research can be done involving more than just one logistic firm should be considered so that the research can be broad and deeper.

REFERENCES

Amref, Kenya, (2010). *Foodborne Disease Outbreaks Surveillance.* Nairobi: Government Printer.

Arvanitoyannis, I. & Efstradiadis, M. (2012). Implementation of HACCP to large scale production line of Greek ouzo and brandy: a case study. *Journal of Food Control 11*(1), pp. 19-30.

Ball, B., Wilcock, A. & Aung, M. (2009). Factors influencing the implementation of food safety management systems in small and medium-sized meat plants in Ontario, Canada. *International Journal of Environmental Health Research, 19*(3), pp. 201-218.

Ball, B., Wilcock, A. & Aung, M. (2010). Background factors affecting the implementation of food safety management systems. *Food Protection Trends, 30*(2), pp. 22-30.

Clayton, A., & Griffith, C. (2008). Efficacy of an extended theory of planned behaviour model for predicting caterers' hand hygiene practices. *International Journal of Environmental Health Research, 18* (2), pp. 83-98.

Clayton, A., Griffith, J., Price, P. & Peters, C. (2012). Food handlers' beliefs and self-reported practices. *International Journal of Environmental Health Research, 12* (5), pp.25– 39.

Dey, M., & Rab, A. (2015). Food safety standards and regulatory measures: Implications for selected fish exporting Asian countries". *Aquaculture Economics and Management 9*(1-2): 217-236.

Early, R. (2013). "Food ethics: a decision-making tool for the food industry?", International *Journal of Food Science and Technology, 37*(4), pp. 339-355.

Eves, A. & Dervisi, P. (2015). Experiences of the implementation and operation hazard analysis critical control points in the foodservice sector. *International journal of hospitality management, 24*(1). Pp 3-15.

FAO. (2016). *Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its application.* Rome: Bruss Press.

Food Codex Alimentarius Commission (2011). *International Harmonization of Food Safety and Labeling Standard*. Cambridge: Cambridge Press.

Food Safety Authority. (2008). *Food Safety Management System.* Dublin: Abbey Court.

Gilling, J., Taylor, A., Kane, K. & Taylor, J. (2011). Successful hazard analysis critical control point implementation in the United Kingdom: understanding the barriers through the use of a behavioural adherence model. *Journal of Food Protection, 64*(5), pp. 710-715.

Government of Kenya (GoK) (2004). *Food, Drugs and Chemical Substance Act Cap 242 of Kenya.* Nairobi: Government Printer.

Herath, D. & Henson, S. (2010). Barriers to HACCP Implementation: Evidence from the Food Processing Sector in Ontario, Canada. *Agribusiness, 26* (2), pp. 265–279.

Hinsz, V., Nickell, S., & Park, S. (2007). The role of work habits in the motivation of food safety behaviours. *Journal of Experimental Psychology Applied, 13* (5), pp. 105-114.

Holm, L. & Kildevang, H. (2014). Consumers' views on food quality. A qualitative interview studies. *Appetite, 27*(1), pp. 1–14.

ISO (2005). *Quality management and quality assurance*. Geneva: ISO 8402.

MacMaolain, C. (2017). *EU food law: protecting consumers and health in a common market.*Oxford: Hart Publishing.

Mascarello, G., Pinto, A., Parise, N., Crovato, S., Ravarotto, L. (2015). The perception of food quality. Profiling Italian consumers. *Appetite, 89* (4), pp.175-182.

Muchangi, J. (15TH August 2019). *One dead, 40 sick after cholera strikes wedding*. The Star. https://www.the-star.co.ke/news/2019-08-15-one-dead-40-sick-after-cholera-strikes-wedding/

Mugenda, M & Mugenda, O. (2003). *Research methods: Quantitative and Qualitative Approaches.* Nairobi: Acts Press.

Mugo, 1. (23RD April 2019). Food hawking in Eastleigh County banned over cholera fears. The Daily Nation. https://www.nation.co.ke/counties/Eastleigh/No-food-hawking-in Eastleigh/1954190-5083350-oi5udpz/index.html

Mugo, I. (19TH August 2019). *Four die, 67 in hospital after eating at Eastleigh dowry ceremony.*Daily Nation. https://www.nation.co.ke/counties/Eastleigh/Four-die-of-food-poisoning-in- Eastleigh--67-in-hospital/1954190-5241594-132h9ku/index.html

Muinde, R. (2010). *Hygiene Practices in Urban Restaurants: Investigating Possibilities of Introducing HACCP Systems in Thika Town.* The unpublished thesis of Kenyatta University.

Oh, H. (1999). Service quality, customer satisfaction, and customer value: A holistic perspective. *International Journal of Hospitality Management,* 18:67-82.

Okeyo, V. (24TH June 2017). *The government in apparent attempt to cover up outbreak.* Daily Nation. https://www.nation.co.ke/counties/nairobi/government-apparent-attempt-cover-up-cholera-outbreak-weston/1954174-3986100-11xk3ci/index.html

Oliver, R. L. (1981). Measurement and Evaluation of Satisfaction Processes in Retail Settings. *Journal of Retailing, 57*(3)

Oliver, R.L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research, 17*, 460-69.

APPENDICES

Appendix I: Introduction Letter

Dear Respondent,

My name is ….currently pursuing Bachelor of Commerce in Business Administration at Dedan Gretsa University. I am conducting a research on the influence of selected factors on the implementation of the Hazard Analysis Critical Control Point (HACCP) system in restaurants in Eastleigh town. I am requesting for your voluntary participation in responding to the questionnaire for this study. Your response will be treated with confidentiality. Responses will be used for academic purposes. Kindly respond with sincerity. I humbly request you to assist me in responding to the posed questions in the questionnaire provided.

Note: Anonymity will be respected.

Thank you in advance for your response, cooperation and participation.

Yours faithfully,

Appendix II: Questionnaire

Questionnaire for Restaurant Management

Note: Kindly tick accordingly within the boxes provided. The numbers within the boxes

Statements	1	2	3	4	5
I have a food safety certificate which I renew upon expiration					
I am conversant with food safety and hygiene practices in the restaurant					
The personal cleanliness is monitored on regular basis before entering into processing areas by Human Resource personnel					
Relevant training and on-going training are conducted on food safety and hygiene practices to enhance and supplement our knowledge to improve our performance					

signal that 1=Strongly agree, 2=Agree 3=Neutral 4= Strongly disagree and 5=Disagree

Questionnaire for workforce

Note: Kindly tick accordingly within the boxes provided. The numbers within the boxes signal that 1=Strongly agree, 2=Agree 3=Neutral 4= Strongly disagree and 5=Disagree

Questionnaire for Public Health Officer

Statements	1	2	3	4	5
We regularly inspect restaurants and food outlets to ensure they comply with existing laws and regulations for consumer protection					
We have employed enough public health officers to ensure they oftenly inspect food outlets and restaurants for appropriate actions					
We secretly visit restaurant and food outlets as customers to check on the progress of HACCP implementation					

Note: Kindly tick accordingly within the boxes provided. The numbers within the boxes signal that 1=Strongly agree, 2=Agree 3=Neutral 4= Strongly disagree and 5=Disagree