FOOD HANDLERS' HYGIENE PRACTICES AS DETERMINANTS OF CUSTOMERS' CHOICE OF SELECTED AFRICAN INDIGENOUS RESTAURANTS' IN NAIROBI CITY COUNTY, KENYA

BY

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University or for any other award.

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DEDICATION

This thesis study is dedicated to my beloved wife, Hannah, my children Kyle and Kelsey, my loving mother, Annah and my dear friend Martin for their support, encouragement and insight throughout the thesis development, data collection, analysis and compilation. Special thanks to all who took part in the interest of my topic of research, for all their inputs directly and indirectly.

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OPERATIONAL DEFINITIONS OF TERMS

Attitudes: An expression of favor or disfavor toward a person, place, thing, or event (the attitude object) (Chukwuocha et al, 2009).

Clean Compounds: Surroundings or environment that is free from dirt, garbage, marks or stains. (Barber & Scarcelli, 2009).

Consumer: A person (s) who is the final user or users of products or services (Brewer & Rojas, 2012).

Customer: A recipient of a good, service or idea obtained from a seller, render or supplier for a price or other valuable consideration (Barber & Scarcelli, 2009).

Determinants: These are different attributes considered by customers before they select a particular restaurant (Jan & Namkung, 2011).

Ethnic: Relating to, or characteristic of a sizable group of people sharing a common and distinctive racial, national, religious, linguistic, or cultural heritage (Utami, 2004)

Food: A substance, which is processed, raw or semi-processed, intended for human consumption including drinks and any substance which has been used in the manufacture, preparation or treatment of "food" but excluding cosmetics, tobacco and substances used only as drugs (Lee et al, 2012).

Food Contact Areas: The and utensils and surface of equipment with which food usually come into contact in addition to surfaces from which food and food materials may drip, drain or splash on to the surfaces in contact with food. (Kwon et al, 2010).

Food Handler: Any person working in Kitchen as chef, a cook, a waiter and waitress who, in his or her routine work, comes into direct contact with food and food materials

in the course of its production, preparation, processing and packaging or distribution (Kwon et al, 2010).

Food Hazard: A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect (Codex Alimentarius, 2013).

Food Hygiene: Conditions and measures necessary for the production, processing, storage and distribution of food designed to ensure a safe, sound, wholesome product fit for human consumption (Codex Alimentarius, 2013).

Food Safety: Assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use (Codex Alimentarius, 2013).

Food Safety Education: Education that deals with the practices that helps keep food safe from bacterial and environmental contaminations (Ratnapradipa et al, 2011)

Fully Serviced Restaurants: Food outlets that serves meals on the premises with a formal Service (Ogutu 2012; Kim,2009)

Hazard Analysis Critical Control Points (HACCP): A system that identifies, evaluates and controls hazards which are significant for food safety. (Codex Alimentarius, 2013).

Indigenous Food: Food, a product that a particular ethnic (racial, national) or cultural group Favors (Utami, 2004)

Indigenous Restaurants: Food service establishments offering a region specific cuisine that tends to reflect the particular characteristics of its local origin. (Utami, 2004)

Knowledge: A familiarity, awareness or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning (Osagbemi et al, 2010)

Perception: How the five senses are processed; Selection, organization and interpretation of information from a meaningful picture of the world (Odeyemi,2012).

Personal Hygiene: Are individual protective responsibility measures which promote health and limit the spread of infectious disease chiefly those transmitted by direct contact, such measures encompasses washing hands with soap and waters and keeping the body and cloths clean by sufficiently frequent soap and water bath (Out,2014).

Restaurant: A business that prepares and serves food and drink to customers in return for money, either paid before the meal, after the meal, or with an open account (Tuttle, 2012).

ABBREVIATION AND ACRONYMS

CDC:	Centre for Disease Control and Prevention
Codex:	Codex Alimentarius
GDP:	Gross Domestic Product
GoK:	Government of Kenya
FAO:	Food and Agriculture Organization
FDA:	Food and Drug Administration
HACCP:	Hazard Analysis Critical Control Point
MEACT:	Ministry of East Africa Commerce and Trade
PBC:	Perceived Behavioral Control
SPSS:	Statistical Packages for Social Sciences
SSOP:	Sanitation Standards Operation Procedures
TPB:	Theory of Planned Behavior
TRA:	Theory of Reasoned Action
USA:	United States of America
WHO:	World Health Organization
WTTC:	World Travel and Tourism Council

ABSTRACT

Dining is a common phenomenon in major cities and towns, especially in modern lifestyle where people have limited time due to work and other related engagements. Indigenous restaurants have become a preference for most consumers although their patronage varies, attributed to various push factors such as health, curiosity and variety. Although hygiene is an important aspect in choosing where to dine, most customers are not keen to observe it. This study explored food handlers' hygiene practices as determinants of customers' choice of selected African indigenous restaurants' in Nairobi City County, Kenya. The specific objectives were; to investigate the food handlers' hygiene practices, assess the food handlers and supervisors' level of awareness regarding food hygiene requirements, evaluate the determinants of customers' choice and examine the relationship between hygiene practices and customer choice of African indigenous restaurants. The study adopted a cross-sectional descriptive survey targeting 15 selected African indigenous restaurants. Purposive sampling was used in selecting all supervisors in the 15 African indigenous restaurants. Using Yamane formula, a sample size of three hundred and forty (340) food handlers was obtained from a population of 2250. Proportionate sampling was used in selecting food handlers as their population had different numbers in each of the selected restaurants. Cochran formula was used to determine a sample size of three hundred and eighty-four (384) customers from a population of 2560 through convenient sampling. Data collection instruments were two questionnaires, an interview guide and an observation checklist. Qualitative data was ordered, coded and summarized in compilation sheets for easier analysis in addition to inferential statistics. Quantitative data was analyzed using statistical packages for social sciences with levels of significance established using paired tests with a cut-off point of $P \leq 0.05$, (95%) confidence and significance levels. Chi square Pearson's correlation coefficient tests were calculated to identify the correlation between food handlers' hygiene practices and customers' choice of restaurants. The findings showed that most restaurant supervisors were well aware of HACCP system although not all of them implemented it. Further, the restaurants do not observe adequate precautions in the entire food production and therefore programs related to HACCP needed to be implemented in a practical and realistic manner. The study further identified that the general hygiene standards of the restaurants were relatively high although during the time of the visits, some were not clean. With regard to the relationship between food handlers' practices and customers choice of restaurants, the findings presented a χ 2 = 4.244, df* = 2 and p = 0.133 which is > 0.05. With a significance level > 0.05 (0.133), the alternative hypothesis (H1) was rejected. The findings showed that there was no significant relationship between the two variables. Most customers were not keen on hygiene standards as evidenced in some restaurants where regardless of the poor hygiene practices present, there were still high flows of customers. The study therefore concluded that even though hygiene practices have an effect on the customers' choice of the restaurants, the effect is not significant. The study recommended the public health authorities in the urban centers to educate all restaurant stakeholders on food hygiene regulations and inform consumers about hazards associated with improper handling of food. The study further recommended that restaurants operators to adhere to the food hygiene regulations and similar studies to be done in other localities, in rural restaurants, and to incorporate more restaurants.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Food is a critical and basic necessity for the physical wellbeing and a source of pleasure. However, its preparation, production and consumption play a pivotal role in life sustenance. Customers look up to the food servers to provide safe food and satisfy their physiological and psychological needs. This chapter presents the background of the Study, statement of the problem, the purpose of the study, the study objectives, research questions and significance of the study. The chapter further discusses delimitation and scope of the study, Limitations and assumptions of the study and finally the conceptual framework and measurement of study variables.

1.1 Background of the Study

Food safety is an essential public health problem that affects all countries. The problem of Food-borne diseases is widespread and represents a serious threat to good health in both developed and developing countries. Approximately two million children die annually from diarrheal diseases, while hundreds of millions suffer from frequent episodes of diarrhea and its debilitating consequences, mostly caused by food or water-borne pathogens (WHO, 2009). In the United States of America, Centre for Disease Control and Prevention (CDC) estimates that foodborne diseases cause approximately 76 million illnesses annually among the country's 290 million residents, as well as 325,000 hospitalizations, and 5,000 deaths of known pathogens account for about 18% of the illnesses and 36% of the deaths, while unknown agents account for the rest.

Food handlers play an important role in food safety and in the transmission of food poisoning, because they may introduce pathogens into foods during production, processing, distribution and even presentation (Ansari-Lari, Soodbakhsh & Lakzadeh, 2010). An understanding of food safety procedures and potential factors that cause food borne illness is very important for all food handlers. According to Magda et al. (2012) only knowledgeable and skilled employees, trained to follow the proper procedures together with management that effectively monitors employees' performance, can ensure food safety. Hands are one of the principle vehicles for the cross contamination of infectious agents onto ready to eat food.

According to Enz, (2014), Managers identified a variety of food-related issues that concerned them. Forty-one percent of food issue responses involved the vexing challenges of food safety, a category comprising supply, preparation, cooking methods, storage, and serving.

1.1.1 Proper Food Handling Measures

Effective hand washing is therefore of great importance in terms of successful hygienic food preparation, as it prevents the spread of infectious diseases (Magda, Siham, Shuaib, & Abdalla. 2012). A study in the U.S.A. suggested that improper food handlers' practices contributed to approximately 97% of food borne illness in food service establishments (Scott & Bloom, 2010). A food handler may cross-contaminate raw food and processed foodstuffs as well as inadequately cook and store foods. Food handlers are a source of organisms either during the course of gastrointestinal illness or during and after convalescence, when they no longer have symptoms.

A couple of studies have indicated that various bacteria, amongst others Escherichia coli, Staphylococcus Aureus, and Salmonella sp., may survive on surfaces and hands for hours and even days after initial contact with the microorganisms (Jiang & Doyle, 2009; Kusumaningrum, Van Putten, Rombouts, & Beumer, 2012; Scott & Bloom, 2010). The above microbiotas have been associated with many food-borne and food related illness for decades and there is no doubt that they, amongst others the genera Listeria, Campylobacter, Bacillus and Clostridium are the causes of illness and even death to many people each year, at immeasurable economic cost and human suffering (Wilfred & Fairoze, 2011).

Analysis of the reports on foodborne diseases outbreak throughout the world have confirmed the fact that, the majority of them result from improper food handling practices. Such practices include use of leftover chicken, improper food storage and unhygienic practices, among food handlers in food-businesses, canteens, residential homes and other places (FAO, 2013; Hejar., NorAfiah, .,Hayati, .,Salmiah, Yusma, &Titi, 2011; Ryu, .,Ko, Park, Yang, & Kim, 2011).

According to Rane (2011), the poor knowledge and improper food handling of indigenous food vendors in basic food safety measures and poor knowledge and awareness among consumers about the potential hazards associated with certain foods could explain the health and safety issues that indigenous foods may pose. Moreover, it is important to state that the costs of food-borne illness include the cost of medical treatment, productivity loss, pain and suffering of affected individuals, industry losses, and losses within the public health sector.

Many respondents noted safe food handling practices as a means of preventing accidents or illnesses. Foodborne illnesses are on the rise indicating inadequate safe food handling practices. According to Enz (2014), Food sanitation and handling are the critical elements in preventing contamination and food-borne illnesses. Making Hazard Analysis Critical Control Points (HACCP) work in various restaurant contexts, such as high-volume white linen operations that do not use frozen or premade foods, was another example of a food issue that challenges managers. Identifying foods that contain transgenic components is yet another worrisome issue. In summary, while food safety is a critical issue in food service industry, many local and indigenous cuisines restaurants fail to uphold its principles (Kabue, 2015).

1.1.2 Food Hygiene Training

A study by Osagbemi, Abdullahi and Aderibigbe (2010) in Owerri, Okene Metropolis, Nigeria on urban restaurants showed that there is inadequate current food hygiene knowledge among the staff. The study proposed the development of a proper food service personnel-training program in order to eliminate the potential danger of outbreaks of food related illnesses. The government involvement in promoting food hygiene through public announcements, offering incentives to motivate restaurants staff trainings, especially fast-food establishments as well as itinerant food hawking outlets were proposed as positive intervention to preventing food related illnesses.

A group of trainees taking part in the Belgian VLIR UOS funded Intensive Training Program in Food Safety, Quality Assurance and Risk assessment at Ghent University opinion on food safety issues in their country further provided insights onto global

concerns on hygiene and food safety. Over the years 2009–2015 a total of 79 participants from 29 countries worldwide including Belgium, Bangladesh, Brazil, Bolivia, Benin, Cameroon, Cuba, Colombia, Cuba, Ethiopia, Ghana, India, Indonesia, Italy, Jordan, Kenya, Nepal, Nigeria, Palestine, Philippines, Rwanda, South-Africa, Sri-Lanka, Sudan, Tanzania, Thailand, Togo, Uganda, Vietnam and Zimbabwe took part in this survey. The major concern in food hygiene and safety mentioned were bacterial pathogens, residues of pesticides and healthy diet. Furthermore, it was clear from the survey that the overall contextual factors mainly impacted on food hygiene were perceived to be lack of food safety knowledge and need of health (Grace, 2015).

Rabbi and Dey (2013) observed a strong correlation between knowledge and positive food handling practices. This reinforced the importance of assessing training needs and evaluating the effectiveness of the training offered to food handlers. Besides, the correct environment ought to be created to ensure that the food handlers apply the relevant skills and knowledge gained from these trainings (Grace, 2015).

1.1.3 Indigenous Food Establishments

According to Leake (2015), majority of third world countries including Kenya, urban population eat food in street vendors Kiosks and indigenous food outlets regularly due to its availability, affordability and usual freshness. Street vended foods usually pose significant health problems due to inadequate basic services and infrastructure like their temporary nature, potable water supplies and poor basic food safety knowledge measures (World Health Organization, 2009). Majority of the indigenous food outlets are temporary in nature, varying from mobile carts to fixed stalls. The venders push

their carts, specially-designed wheel-barrows or bicycles from location to location often "parking" under shades of tree to serve their customers (Osagbemi, et al., 2010).

Indigenous food restaurants are an important and integral part of the Igbo people business culture in Imo State. They are a source of affordable, convenient and nutritious food for rural and urban poor population. They are also a source of attractive and varied food for tourists and the economically advantaged (Fatiregun, Oyebade,& Oladokun, 2010). Indigenous restaurants have also become an integral part of today's life. First, they are a source of income for a vast population, self-employment, and an opportunity for business skills development with less capital investment.

Besides providing business opportunities to developing entrepreneurs, sale of indigenous food outlets make a huge contribution to the developing countries economy. According to Leake (2015), one barrier to food safety in Africa is poor waste disposal and inadequate toilet facilities for the use by customers. Most of indigenous food restaurants were characterized by unsafe and unsanitary conditions, including poor drainage and water supply systems, overcrowding and unsanitary refuse disposal resulting in poor environmental and personal hygiene (Salmiah, Yusma, &Titi, 2011)

1.1.4 Food Consumption Choices

According to Howell (2015), food consumption choices always have an effect on the decisions that consumers make, which include food that is excellent in taste due to its freshness, identifiable ingredients, spices and flavors. These factors have contributed to the awareness and knowledge of indigenous cuisines, which is rapidly becoming popular especially where the consumers are gastronomically adventurous. Although

there are many food choices, consumers are willing to indulge in much more when it comes to trying out new cultures and diverse cuisines when selecting their food (Bente, 2010). Moreover, they prefer enhanced eating experiences, such as intense flavors and extreme textures. Despite the presence of internationalized food and eating establishments, opportunities exist for local fanfare to excel in a region of culinary coalescence, such as Southeast Asia as enjoyment for local dishes is currently on the rise.

Unique identity of indigenous food is fascinating as it has particular traditional food preparation techniques, practiced and inherited from generation to another (Kusumaningrum, Van Putten, Rombouts, & Beumer, 2012). Human behavior change in various ways due to the complex nature when it comes to selecting food. Personal factors such as motives and emotions are precursors toward food consumption choices. Eight factors, namely health, mood, convenience, sensory appeal, natural content, price, weight control, and familiarity, are common indicators in many countries when eliciting consumers' eating habits(Jones & Angulo, 2016).

The emphasis of gastronomy combines eating into a new cultural world from both a mental and physiological point of view. Studies have revealed that customers are increasing their knowledge of consuming foods that are nutritious, wholesome, safe, and friendly to the environment (Markovina, Stewart-Knox, Rankin, Gibney, De Almeida, Fischer, Kuznesof, Poínhos, Panzone, & Frewer, 2015).

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There are several studies have been conducted to ascertain factors that influence consumers to choose restaurants. According to Wang and Chen (2012), food quality was the most important consideration influencing restaurant selection by consumers. Akbar and Alaudeen (2012) stated that the consumers evaluate factors such as; surroundings, customer turnover, location, price, quality of food, quality of service, and type of food in choosing a restaurant. According to Kafel and Sikora, (2013), seven factors that caused consumers to choose a restaurant included food quality, cleanliness, service, value, menu variety, convenience, and atmosphere. Huang (2007) stated that the consumers evaluate factors such as price, variety of food, parking lot, reservation, and special request in choosing a restaurant.

A study by Kim and Moon, (2009) and Huang (2007) found out that the factors that influence customer choice of a restaurant included prices of meal, past experience with similar types of restaurants, reputation of restaurant among people that respondent know, convenience, whether any memorable advertisement seen, appearance of other

customers, whether employee appropriately dressed, manner of employees, and premise. Ungku Fatimah, Boo, Sambasivan and Salleh (2011) also found that customers selected restaurants based on service, quality of food and ambience.

1.1.5 Sources of Food Materials

According to World Health Organization (2009), the source of foods and ingredients supply were major area of food safety concerns as majority of the establishments purchased their raw food ingredients and materials in the open-air markets. According to Muinde, Kiinyukia, Rombo and Muoki (2012), about 74% of the urban restaurants are ready to eat establishments where food is prepared early enough to hold and only (26%) of the total restaurants, customers made an order of food they wanted. About 63% of the restaurant operators and staff had knowledge on quality control on food safety measures. The study showed that only 8% of the restaurants applied this knowledge while 86% of the restaurants staff showed that food contains ingredients that were hazard if poorly handled.

Whenever there is investigation of food poisoning outbreaks, it is evident that small, temporary and medium sized restaurants are often major source and locations in transmission of the foodborne illnesses (Walker, Pritchard & Forsythe, 2009). The study, therefore, aimed at assessing the food handlers' hygiene practices in African indigenous restaurants in Nairobi City County as determinants of customers' choice of restaurants.

1.2 Statement of the Problem

Indigenous restaurant customers are generally composed of individuals from different cultural, ethnic and economic backgrounds and most of whom have definite and conflicting restaurant preferences (Akinyele, 2010). As such, they have different characteristics; hence, they tend to use different criteria in selecting restaurants (Chung & Kim, 2011). A deeper understanding of consumers' selection criteria will provide restaurateurs with valuable information and insights, which enable them to attract and retain more consumers (Jang & Namkung, 2007). Thus, the central question for this study was is: what are the major attributes that influence their choice of African indigenous restaurant? In the available and current literature, menu price is one of the major factors determining consumer decision-making and subsequent behaviors (Chung & Kim, 2011).

Kafel and Sikora (2013) assert that restaurant consumers use price as a measure for the quality ofthe restaurant, assuming that an expensive restaurant serves better food and offers better quality. Therefore, the relative importance of the restaurant choice factors differ considerably by restaurant price (Massawe, 2013). Consequently, there is a need to understand the choice factors and their relative importance that influence restaurant patrons' decision so that restaurateurs can supply their offerings and develop strategies accordingly (Josiam & Monteiro, 2014).

While food hygiene is a key factor in deciding where a customer can dine, (Ungku Fatimah et. Al., 2011), most of them do not think of hygiene aspect when choosing a place to eat. The few who consider hygiene normally use visible cues such as restroom

cleanliness and aesthetic tto reflect the environment hygiene. A couple of scholars have indicated the major push factors for customers to visit indigenous restaurants as curiosity, for health reasons as well as to sample the variety of dishes offered by these establishments (Campos, Cardonha, Pinheiro, Ferreira, Azevedo & Stamford, 2009). There is a gap in Knowledge on whether food handlers' practices play any significant role in customer process and extend of this food safety and hygiene training outbreaks by various means for decades (Chapman, MacLaurin, & Powell, 2011).

In addition to this, there is very little exploration on customer awareness of food safety issues and concerns for dining in indigenous food establishments, their opinions on current food safety practices in these restaurants, and suggestions on how to improve food safety practices (Lee, Niode, Simonne, & Bruhn, 2012). Consumer's knowledge and attitude was noted to influence food safety behavior and practice. The open kitchen trend is on the rise in all major towns and cities in the world, where chefs cook within view of customers. This is attributable largely to the space constraints in addition to watching chefs cook on Television. The fascination with what goes on in restaurant kitchens has made customers grow obsessed with chefs creativity, the use of fresh and exotic ingredients and how they are combined (Tuttle, 2012).

According to Chemweno (2015 March 25), an incident of food poisoning had been reported at Strathmore University following a dinner function organized for Fourth Year students the previous Friday at the university's auditorium. From this incident, 80 cases of food poisoning occurred with 25 students hospitalized at a Nairobi hospital after consuming food from out sourced catering. Muiruri (2015 March 25), detailed and

included interviews with some of the hospitalized students and doctors at Nairobi West Hospital who attended to the affected students. However, the report failed to mention the details of the catering service provider and hence the actual source of the contamination was not established.

It is evident that not only the ignorance of food hygiene that causes food poisoning but also, the lack of application of the acquired knowledge. The major challenge in the food industry currently is to motivate food handlers, to apply their knowledge regarding food hygiene (Ehiri & Morris, 2012). Some of the proposed reasons for lack of application of the acquired knowledge especially in small business enterprises include recruitment of staff from lower socio-economic class, low education low motivation due to job status (Bush, Paleo, Baker, Dewey, Toktogonova, & Cornelio, 2009).

According to Kisembi, (2010) study on hygiene practices in urban restaurants in Kenya majority of the restaurants serving local dishes restaurants have open plan Kitchen switched together with the restaurant, thus the customers can see the activities in the Kitchen. This study therefore sought to bridge this gap by exploring food hygiene practices among food handlers in African indigenous restaurants, their source of food safety information, level of food handlers' training, their knowledge of food safety and factors affecting customers' choice of dining in indigenous food establishments.

1.3 Purpose of the Study

The purpose of this study was to fill the gap in knowledge on food handlers' hygiene practices as determinant of customers' choice of an African indigenous restaurant in Nairobi City County by documenting their feedback during the research.

1.4 Objectives of the Study

The research study was guided by the following study objectives

1.4.1 General Objective

The general objective of this study was to investigate and document food handlers' hygiene practices as determinants of customers' choice of African indigenous restaurants' in Nairobi City County, Kenya

1.4.2 Specific Objectives

i. To investigate the food hygiene practices among food handlers working in African indigenous restaurants in Nairobi City County, Kenya.

ii. To assess the level of awareness regarding food hygiene requirements among food handlers and supervisors in African indigenous restaurants in Nairobi City County, Kenya.

iii. To evaluate the determinants of customers choice of African indigenous restaurants in Nairobi City County, Kenya.

iv. To examine the relationship between food handlers' hygiene practices and customer choice of African indigenous restaurants in Nairobi City County, Kenya.

1.5 Research Questions and Hypotheses

1.5.1 Research Questions

i. What are the food hygiene practices among food handlers working in indigenous restaurants?

ii. What is the level of awareness regarding food hygiene requirements among food handlers in indigenous restaurants in Nairobi City County?

iii. What are various factors influencing customers' choice of an indigenous restaurant in Nairobi City County, Kenya?

iv. Is there a relationship between food handlers' hygienic practices and choice of indigenous restaurants in Nairobi City County, Kenya?

1.5.2 Research Hypotheses

H0: There is no significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi City County, Kenya.

H1: There is a significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi City County, Kenya.

1.6 Significance of the Study

The increasing number of indigenous restaurants offering a variety of food and beverage is because of the ever-growing urban population. There is limited data on food handlers' safety and hygiene practices in local indigenous restaurant. It was therefore important to research this topic as this would assist in improving food safety and hygiene standards of the food handlers. This would further aid in keeping in check food borne illnesses incidences in restaurants and other food service outlets.

The result of the study would help policy makers to develop effective and supportive training programs that would eliminate food safety hazards and promote health. There

was also the need to assess the present food safety situation in order to develop preventive and protective solutions such as good hygiene practices and application of HACCPs system in indigenous restaurants.

The findings of the study would further increase awareness of food safety and hygiene standards, knowledge and attitudes of indigenous restaurants' food handlers and encourage sustainable application of hygiene practices among the caterers. The findings would help the restaurants' proprietors to better understand workers towards food hygiene and highlights the importance of instituting and monitoring food handlers training programs and practices.

1.7 Delimitation/Scope of the Study

The study focused on African indigenous restaurants' within Nairobi City County and endeavored to bring out the food hygiene practices within these establishments as determinants of customers' choice of an establishment. The study was workers and customers centered and aimed to collect data from indigenous restaurant within the area of the study. The study explored the food handlers' hygiene practices, their source of food safety information, level of training and knowledge, as well as determinants of customers' preference of African indigenous restaurants within Nairobi City County. Data collection tools were customers' questionnaire, food handlers' questionnaire, an observation checklist and an interview guide for supervisors.

1.8 Limitations of the Study

The main limitation of the study was experienced during data collection. Due to the busy

working hours, the food handlers did not have enough time to fill the questionnaires. To counter this, the researcher gave out the questionnaires for the participants to fill at their convenience, after their shift is over. The other challenge experienced was collecting data from the customer participants. It took the researchers a lot of time to convince the customers to take part in the research study, as most of them were not willing to take part in the study. This was achieved by convincing them that the study was for academic purposes and that their participation would be highly appreciated.

1.9 Assumptions of the Study.

A basic assumption of the study was that customers patronizing the African indigenous restaurants have similar incomes level, their buying power and capacity are equal. There is no significant difference between their economic wellbeing. The researcher further assumed that the food handlers answered questions as truthfully and correctly as possible in the questionnaires.

1.10 The Conceptual Framework

The conceptual framework shows the relationship between independent variables; Food handlers' hygiene practices, Food handlers' awareness/knowledge, Food handlers' hygiene training, and source of food hygiene information for food handlers. The dependent variable is customer choice of an African indigenous restaurant. Intervening variables were the customer beliefs and confidence in the safety of the food offered in indigenous restaurant and their readiness to patronize them. Food safety beliefs are set of individual beliefs about consequences of a particular behavior and evaluation of that

behavior. Individual perception of social normative pressures from others and the self-assessment and judgment influences the behavior adopted by a person.

Control beliefs and perceived behavioral control illustrate self-awareness of factors that facilitate or impede customers' perception, intentions and choices. The four independent variables affect the behavioral intentions of the customers, described by readiness to perform a certain duty, usually an immediate antecedent behavior towards his or her interest. Behavior, being an individual response in a given situation is what drives the customer towards a given target, which is the African indigenous restaurant. The conceptual framework for this study was adopted from Ajzen (1991) model of the Theory of planned behavior. The theory states that individual's attitude towards a behavior, the motivation self and influences and the perceived behavioral control shape the intentions and behavior adopted by an individual.

Food Handlers' and their customers' intention to perform a given act is controlled by their knowledge, beliefs and attitude towards that certain Act. The knowledge of the expected outcome plays a vital role for customers in selecting a certain establishment. Favorable attitude towards a belief brings out stronger personal intention to carry out the behavior. Given sufficient degrees of control over a behavior, individuals executed their intentions.

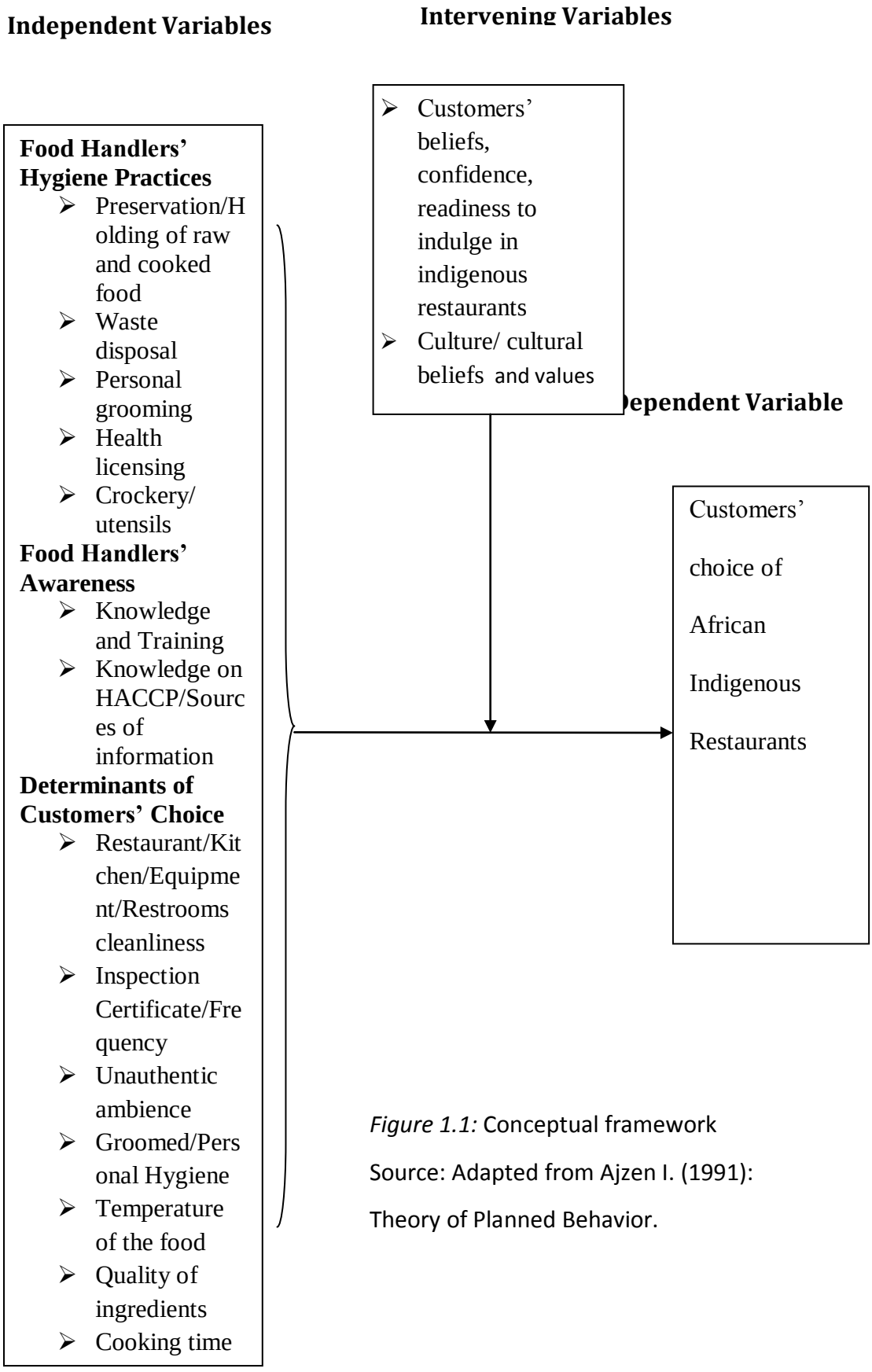

Figure 1.1: Conceptual framework

Source: Adapted from Ajzen I. (1991): Theory of Planned Behavior.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed literature on food handlers' hygiene practices, their knowledge, awareness and hygiene training, their sources of food hygiene information as well as determinants of customers' choice of and African indigenous restaurants their awareness. Literature review further focused on customers' confidence in the Safety of Food served by Restaurants, their beliefs, Readiness and frequency of visiting restaurants serving African indigenous cuisines. The research evaluated the constructs of the theory of planned behavior as applied in this study.

2.1 Empirical Literature Review

2.1.1 Food Handlers' Hygiene Practices

According to Isara and Isah, (2009) food handlers are persons involved in either point of preparation, processing or production of food. Thus, food handlers' personal hygiene practices and cleanliness is essential in minimizing the risk of food contamination and hence food poisoning. Food handlers are required to minimize contact with raw and ready to eat food and, observe that health related issues such as illnesses are handled with utmost care (Queensland Government, 2011). Food handlers are potential sources of microorganism that causes illnesses through transmission of bacteria and viruses onto food or food preparation surfaces. This results to food contamination and poisoning, that is eliminated through proper hygiene practices of handling raw and ready to eat food material for safe food provision (FDA, 2009).

FDA (2010) stated that poor personal hygiene was identified as one of the most risk factors in food borne illnesses occurrence. Customers are reluctant to patronize establishments that portray low level of cleanliness in fear of possible food borne illnesses. The research points out that food handlers' knowledge and awareness about personal hygiene requirement plays an important role in preventing food contamination. Various studies have investigated influences of food handlers safe handling practices, with barriers identified. Most of these influences and barriers are behavioral such as regular hand washing, improper use of certain equipment and failure to utilize training manual provided by the employers (Roberts, Arendt, Strohbehn, Ellis & Paez, 2012).

According to Meyer, Strohbehn, Shelley, Arendt, Correia, UngkuFatimah, & Jin, (2013), factors affecting food handlers' safe food handling practices are multidimensional and extend beyond food safety knowledge. Chapman, (2011) observed that organizational factors have a role in changing food safety behavior of food handlers. Knowledge of organization factors such as work place culture is a good intervention in effective food hygiene and safety practices. It assists in reinforcing positive impacts of customer-contact staff, which are constantly interacting with customers thereby affecting the service performance.

In Africa, regular surveillance of food borne diseases is weak. Food hygiene has become an increasingly important public health issue especially in urban centers with Nairobi City County included. Research by Kwon and Roberts (2010) found that there is a significantly higher number of food hygiene violations in ethnic restaurants than in non-ethnic restaurants. The research brought out the reasons for the differences as lack

of food hygiene training in indigenous cuisines restaurants. Further research by Kabue (2015) documented that there existed a strong positive relationship between environmental hygiene, Personal, kitchen, Food hygiene and waste disposal in most restaurants within Nairobi City County. The hygiene concerns are directly linked to food handlers' practices. This presents the question whether the food handlers' hygiene practices dictates the customers' choice of restaurants.

According to Chung and Kim, (2011) food handler ought to dress in clean and proper attire, wash hands thoroughly with soap and clean water before and after handling food, after visiting the toilet, after handling unsanitary articles, touching animals, touching raw food, after handling toxic and dangerous materials as and when necessary. Fingernails ought to be short, hair tidy, covered, clean, and Non-infected cuts completely protected by a waterproof dressing. Smoking chew gum while preparing or serving food as well as unhygienic practices such as spitting and cleaning nose, ears or any other body orifice. On environmental hygiene, clean compounds proper liquid and solid waste disposal, clean utensils and food stores guarantee hygiene (Massawe, 2013).

2.1.2 Food Hygiene Knowledge and Training

According to Lee, (2012) the cleanliness of the kitchen, the storage temperature of food and the quality of food are the most influential conditions for food safety. In the above study, consumers are said to normally use these factors as a measure and determinant of hygiene and safety of the food prepared and served within the establishments. Food handlers' knowledge of safety and hygiene matter is essential in in ensuring that food

provided by the establishments is fit for consumption. Serbia, (2010) noted that food hygiene procedures and practices in various food outlets are different and are viewed different by various customers. To harmonize the differences, the study suggested application of HACCP, a management system used in addressing food safety through the analysis and control of chemical, physical and biological hazards from procurement, raw food material production, processing, handling and consumption in an effort to produce safe food (WHO, 2012).

In a study by Kwak and Chang, (2010) restaurants that incorporated a food safety and hygiene training program were patronized more frequently than those that did not have one. Food training programs that focused on employees' knowledge and proper food handling behavior was observed to have improved the hygiene standard of the food outlets. Ratnapradipa, Quilliam, Wier, and Rhodes, (2010) noted that success of a food safety education program is impacted by methods used to instruct and deliver the information to the trainees. The study also concluded that where food handlers were properly trained, minimal customers' complaints on food hygiene were recorded and the establishments enjoyed more patronage by customers.

Seaman, (2009) developed the food hygiene training model based on result of successful theories and models in the health field. The model comprised of three components of evaluation, management and measurement of performance of the trainees. The study showed that knowledge retention on new food safety practice was high in establishments where structured training program existed. These establishments further enjoyed high customer patronage throughout the year due to positive word of

mouth and improved decor and ambience. Food safety is responsibility of every person who is involved in food service operation. Nieto-Montenegro, Brown and Labarde, (2008) observed that general food handling mistakes besides serving contaminated raw food also includes inadequate cooking, heating, or reheating of food consumption of food from unsafe sources, cooling food inappropriately and allowing too much of a time lapse.

Those errors might lead to food poisoning. Various studies have identified the need for training and education of food handlers in hygiene measures on microbiological food hazards, temperature ranges of refrigerators, cross contamination and personal hygiene (Worsfold & Griffith, 2010). This was attributed to the fact that many food handlers especially working in indigenous food outlets are untrained in the operations. However, some preceding studies have shown no differences between staff who attended educational course with those who did not (Almanza, Namkung, Afifi & Abshelaibi, 2012).

This statement is supported by several studies (Compos, Cardoha, Pinheiro, Ferreira, Azevedo & Stamford, 2009; Thobaben, 2010) and it shows that training may increase a person will have favorable or unfavorable evaluation towards behavior. Such as person who thinks that preparation and handling food in hygiene way is important and necessary, they are likely to engage the behavior. Vladimirov, (2011) point outs the correlation of positive behavior, attitudes and continued education of food handlers towards the maintenance of safe food handling practices

2.1.3 Sources of Food Hygiene Information

The news media is an important vehicle for food hygiene and safety information transmission, a source of information for food handlers as well as consumers, credited with building and undermining their confidence in the food safety (Lofstedt, 2006). Media attention to food safety issues is considerably responsible for changing consumer perception and behavior. According to Neal, Binkley, and Henroid, (2012) negative news has more impact on the consumers' attitude compared to positive events.

The availability of food safety issues in the mind of consumer is dependent upon the type of hazard at hand. Where the food service outlets appear unhygienic, the consumers' view and confidence in safety practices of food handlers greatly diminished. Today, food handlers receive more information about food, nutrition, and health and food safety issues more than before through various media such as social sites, emails, print and mass media. This affects their decision-making beliefs and processes about food quality, food safety, hygiene and food preparation and service environment (Mathews, 2011).

2.1.4 Customers' Choice of Indigenous Restaurants

According to Barber and Scarcelli, (2009) customers usually select restaurants and other food outlets that meet their approved standards for value and quality, where any restaurateurs who ignore this aspect suffer low volume of business and income as well. Liu et al. (2009) observed that indicators of safe food play an important role in customers' loyalty and retentions in hotel industry. These indicators include restroom cleanliness and ambience, which often influence customers' attitude towards a

restaurant and its' staff hygiene practices. Namkung and Jang, (2009) further observed that service quality, product quality and the atmosphere are attributes affecting perceived quality of the restaurants' and meals experience. These were tied to the personal hygiene of the food outlets workers, who have a direct contact with the patrons of the establishment.

According to Kim and Moon (2009), customers follow different criteria when deciding on where to dine out. Restaurant environment is considered a major concern for the customers who wish to dine out. Usman (2012), indicated that customer consider price, variety of food, promotional deals and timely service as important factors in selecting a restaurant and this vary from one group of customers to another. Even though income levels, health and curiosity are push for customers visiting indigenous restaurant, hygiene factors were presumed to be vital in decision-making. According to Odeyemi (2012), customer attitudes of hygiene has various determinants which include cultural diversity, type of food offered in restaurants, safety of prepared and sold food in addition to personal hygiene of the food handlers. The researcher observed that these were the main determinant of food safety and hygiene in catering establishment.

These individuals play an important role in customers' attitude and choice of eating points among other factors. The researchers further observed that hygienic state of restaurants environment affect the attitude of customers toward the whole meal experience. Presence of rodents, cats and insects around restaurants affect the meal experience. Customers' choice of restaurants is based on many varied factors. Several published studies, have investigated key criteria consumers use in choosing a restaurant

resulting to a number of varied choice factors. The factors that have been found to influence restaurant decisions are Food Quality, Unique Tastes and Ingredients, Menu Variety Appearance and Presentation as well as healthy food options (Namkung & Jang, 2009). The physical environment of the restaurant such as restaurant's atmosphere, ambience, décor, furniture and other facilities can have a great impact on consumer selection behavior (Kivela et al., 2009). Customers generally feel superior in restaurants with elegantambience, décor and furniture and they claim that the ambience and style suit their esteem need (Akbar & Alaudeen, 2012).

2.1.5 Confidence in the Safety of Food Served by Restaurants

According to Usman, (2012) consumers' attitudes about food safety in general has not been given much attention; the focus is on the perceived safety or risks of specific product groups. Food safety confidences indicate the implicit beliefs in that, consumption of food products will not lead to adverse health effects, which is the expectation of an average consumer. Bente, (2010) observed that consumer established expectations are usually disappointed, especially in cases where food safety incidences have occurred. In this light, consumers' confidence in the safety of food has various determinants; Consumers often rely on actors in food-chain to provide safe food since they cannot always measure or judge the hygiene and safety of food in the course of normal consumption.

It is also evident that consumers use their trust in sale persons especially ones known to them as a strategy to assess the safety of food provided. Thus, different actors such as suppliers, producers and servers affect consumers' confidence in food safety and

hygiene, where some may have a greater positive or negative impact on consumers than others (Osagbemi, Abdullahi, & Aderibigbe, 2010). According to Jan and Liu, (2009) consumer recall of food safety incidences and media coverage play an important role in building and undermining consumers' confidence in certain products. The availability of food safety issues in the mind of consumers is dependent on the media news, which is responsible for changing consumer perceptions and behavior. Consumers tend to remember negative news more than positive news about certain incidences thus diminishing their trust and confidence in the affected service providers. This further translates to decreased purchases and patronage by customers.

2.1.6 Consumers Beliefs, Confidence and Readiness

Jang, Liu and Namkung, (2011) surveyed customers' about their dining experiences in Thai restaurants with more extensive authenticity- related items. Their findings indicated that customers considered going to ethnic restaurants a great way to learn about different cultures. When choosing restaurants, customers increasingly look at the hygiene and price as the critical determinant. Similar to consumers, the proprietors of restaurants further pointed out that in selecting strategic plans for surviving the competitive markets, food quality and hygiene have been regarded as the top priority. According Korean Food and Drug Administration (2007), 510-foodborne disease outbreaks with 9,686 patients were reported, of which approximately 75.9 percent (387 outbreaks) were attributed to food service establishments. In particular, outbreaks in the foodservice sector reached 108 commercial foodservice settings and 93 institutional foodservice operations.

These food safety problems in the foodservice operation sectors can lead to detrimental results on the customers' health as well as enormous economic loss when improperly managed. Sanitation matters have received continuous attention and now require high standards for improvement. Sarah, Daleen, Hanli, Magdalena and Annamarie (2012), noted that acceptability and preference of indigenous restaurants and intended consumption of indigenous food differ significantly between the communities, age groups and education levels. Overall, some indigenous foods are more acceptable, preferred and respondents' intended to eat it more often than the others except for hygiene reasons.

Kim and Moon (2009) note that since customers hold different expectations and perceptions of their different dining experiences in a different restaurant type, they may also have different selection criteria when they decide where to dine out according to the restaurant type. Chung and Kim (2011) claim that full-service restaurants are more likely to attract hedonic customers who pay more attention to restaurant environments, whereas fast-service restaurants tend to appeal utilitarian customers who value functional benefits. Therefore, the customers' confidence and beliefs affects selection criterion of the type of restaurant customers they want to patronize.

2.1.7 Culture and Cultural Values

Yusliza and Shankar, (2010) observed that cultural difference is a major factor that affects customers' and food handlers' perception of hygiene and safety of food in an outlet. In this study on food safety knowledge among international students in National University of Malaysia Residential Hostels, attitudes of students towards restaurants

food hygiene varied from student to student as a result of their cultural background. This is an indication that culture influences the judgment of an individual towards a given phenomenon. Previous work on employees' motivation to follow safe food handling practices has reported varying influences of employees' cultural background and their demographic characteristics as to what was perceived as motivating their practices (Ellis, Arendt, Strohbehn, Meyer, & Paez, 2010).

Social and cultural influences are affects consumers' and food handler safe food handling behaviours. According to Brewer and Rojas (2012), various researchers emphasized on the importance of understanding the cultural differences in predicting customers' perceptions and expectations of what actually constitutes a good service. They are inevitably culturally bound so that culture affects customers' service assessments. Cross-cultural studies of Asian and Western restaurant customer-service quality evaluations, have revealed that consumers from different cultural set up consider different set of factors when evaluating a restaurant, they wish to dine in.

According to a study by Powell, Jacob, and Chapman, (2011), respondents from U.S.A ranked hygiene as most important and of secondary importance by the customers from Hong Kong among the six critical service dimensions presented to them as follows: Cordiality, hygiene, Professionalism, Knowledge, Accommodation, and Entertainment. Although, the two groups indicated hygiene as a significant dimension, there were variations in its assessment. American respondents place more weight on cleanliness of eating utensils, the avoidance of contact between servers' hands and the condition of servers' hair. However, Hong Kong respondents placed more importance on the how

well –manicured, a server's hands were, supporting the idea that customers from different cultures have different expectations and perceptions of hygiene and safety.

Josiam and Monteiro (2004) concurs that cultural beliefs, unique food taste and ingredients play an important role for consumers when selecting a restaurant. Restaurants frequently develop new menus and offer a selection of different menu items to increase customer frequency (Mhlanga, Hattingh & Moolman, 2014). Therefore, it is crucial that restaurateurs understand the culture and cultural influence of food and restaurant selection criteria as this information can guide them in their target marketing ((Ryu, Lee & Kim, 2012; Kleynhans & Roberson, 2015).

2.2 Theory of Planned Behavior Constructs (TPB)

The theory has three main constructs; Attitude, defined as the degree to which a person appraises or evaluates the behavior in question to favorable or unfavorable in a dimension of pleasant or not pleasant, good or bad, harmful or beneficial, like or dislike (Ajzen, 2001, Bas, Ersun, & Kivanc, 2016).). Behavior stem from attitude but not part of it as attitude may suggest and be the primary determinant of intentions. Subjective Norms (SN), the second construct, explained as different social references that exert influence or social pressure to perform a behavior. The theory suggested that one form a belief based on what other people expect them to do based on the observation of their actions.

People usually possess favorable attitude towards certain object, but, if the other people pressures them not to do it, they will then have negative attitude towards the behavior (Fishbein & Ajzen, 2010). The Perceived Behavioral Control (PBC) is an addition to

the earlier model of the Theory of Reasoned Action (Ajzen & Madden, 1986) and it is the last construct of TPB. This control indicates the perceived belief of easiness or difficultness in performing behavior, a reflection of beliefs of the availability of resources and opportunities in order to perform the behavior. It explains that, when a person does not have volitional control, it may limit the prediction of behavioral intentions and behavior.

Therefore, the Theory of Planned Behavior (TPB) has been proposed to remedy this problem which was not addressed in the Theory of Reasoned Action (TRA) earlier (Ajzen, 1985). Perceived Behavioral Control (PBC) is important in explaining people's behavior especially when they do not have whole control due to situational factor. Theory of Planned Behavior is a more superior model compared to the previous Theory of Reasoned Action (TRA) (Symons, Taber, Evenson, Leiferman, & Yeo, 2012). Despite its strength to predict intention, TPB has been argued and debated on the sufficiency and the need for external variables that can further help to improve the prediction of intentions.

Above theories are frameworks to explain consumer safe food handling behaviours. Theory of Planned Behaviour, which suggests that an individual's behaviour is mediated by their intentions to perform the behaviour, and that their intentions can be predicted by their attitudes toward the behaviour, their subjective norms (that is, social pressure to perform the behaviour), and their perceived behavioral control (that is, perceived ability to perform the behaviour).

This theory and its constructs (in particular, subjective norms and perceived behavioural control) are associated with safe food handling behavioural intentions and self-reported behaviours among consumers and food handlers. The constructs appear to be important factors affecting consumer behaviours in decision making as a predictor of intentions. Mullan and Wong's (2009) observed that the TPB variables (attitude, subjective norm, and PBC) accounts for a significant level of variance for behavioral intentions. Furthermore, the study revealed that an intervention based on the TPB directly resulted in changes in young adult consumers' food handling behaviors (Milton & Mullan, 2014).

This study used the theory of planned behavior to investigate the intention of customers to patronize an African indigenous restaurant as determined by the food handlers hygiene practoces. Any of the influences on restaurant choice are likely to be mediated by the beliefs and attitudes held by an individual customer. (Ajzen & Sheikh, 2013)

2.3 Summary of the Literature Review and Research Gap

The term "Indigenous food", has been defined differently in various studies. The Food Marketing Institute (1998) defines indigenous food as a product that a particular ethnic (racial, national) or cultural group favors. Utami (2004) defines indigenous food as a regional specific cuisine that tends to reflect the particular characteristics of its local origin. Indigenous food is normally considered ethnic, by people, who are in a different area from their origin. It can also describe the cuisine of the minority immigrants in multicultural societies (Utami, 2004). Today, customers are more concerned about their health, driving a growth in demand for healthy food (Sulek & Hensley, 2004).

Namkung and Jang (2009) findings showed significant relationship between healthy food choices and individual behavioural intentions.

The National Restaurant Association (USA) reported that a large number of restaurants are adding items and adjusting their menus to accommodate and attract consumers who are concerned about health and nutritional value of a meal (Mill, 2007). Previous studies have found evidence of consumers' beliefs that particular ethnic foods are healthy. Bailey and Tian (2012) reported that consumers of Indian restaurant in the United States of America viewed Indian food as much healthier than American food. Similarly, health was the most important value of eating Indian food for English consumers in the United Kingdom (White & Kokotsaki, 2004). Food safety and hygiene practice are important factors that promote healthy food service, customers' retention and loyalty in various food and beverage service establishments.

The literature review has revealed that customers patronizing food outlets use visible cues such as restaurant cleanliness to judge the hygiene of food and food preparation areas. It is evident that cleanliness of the kitchen and quality of service areas are the main factors investigated by various researchers. There is limited emphasis on personal hygiene practices of the food handlers such as hand washing, grooming as well as their health status, as factors that promote food safety and hygiene in indigenous restaurants. Most of the research studies were about what food hygiene entails, with very limited information on the customers' attitudes towards the safe food practices of the food handlers. There is further emphasis on safe food handling procedures with food hygiene

regulations illustrating food handlers' practices that promote health, majoring on the kitchen staff (Powell, Jacob &Chapman, 2011).

Stamford (2009) noted that there is increased emphasis on incorporating a food safety and hygiene training program that focuses on food handlers' hygiene and the application of HACCP system to solve the food hygiene and safety related issues. From the study, the customers' perception about food hygiene is limited to fast food and full service restaurants. The available information concentrates on the service process and factors such as efficiency, timeliness and value for price paid, with little consideration of hygiene as factors that customers consider in eating out.

The reviewed literature indicated that no studies has been carried-out locally on the food handlers' hygiene practices as determinants of customers' choice of restaurant. In addition, there is no clear study that has been carried-out specifically among the African indigenous restaurants in Kenya. The foodborne illnesses are on the rise despite the many interventions and research in food safety. According to Roberts et al. (2011) indigenous restaurants phenomenon is on upward growth and customer base is enlarging. It was therefore imperative to conduct this study in order to seal the existing gaps in knowledge.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discusses the methodology and procedures used in examining the purpose of study and explores the objectives presented in chapter one. The research methodology considered the following sections; Research design, the study area, the target population, sampling techniques and the sample size, the research instruments and pretesting, instruments validity and reliability as well as data collection and data analysis techniques. Logical and ethical considerations of the research study have also been considered and discussed in this chapter.

3.1 Research Design

The research study employed a cross-sectional descriptive survey to investigate food handlers' hygiene practices as determinants to customer choice of an indigenous restaurant. The design has quantitative and qualitative approach methods, which helped to unravel the behavior, opinions, knowledge, practices and beliefs of the food handlers towards food hygiene and safety in the indigenous restaurants and their impact on customer choice of an establishment within Nairobi County. This design is suitable as it explores for explanations of the nature of certain relationships (Kubde, Pattankar & Kokiwar 2016). The design provides an understanding of the facts that exist between variables of the study by taking care of all measurements. The design chosen is relatively easy and quick to obtain data that is subjective to statistical analysis (Brotherton, 2008). A study by Gall and Borg (2010) states that the survey design assists the researcher in

making observations of the facts and status instead of manipulating the variables of interest.

3.2 Study Area

The research study was carried out within Nairobi City County (See attached Appendix VII). This is because the ethnic composition of the area is large with a majority of the African indigenous restaurants concentration within the city center. The area further enjoys the highest number of classified and unclassified hotels with multi cuisine restaurants (MEACT, 2013). The selected area is an administrative, political and metropolitan capital, with about one million people visiting and working within its urban areas such as the Central Business District (CBD), Westlands and Upper hill in each day (Ogutu, 2012). It is the largest city in Kenya, the capital of the country with vibrant multi-cultural and multi-national population and corporations, representing both local and international community (GoK, 2009).

3.3 Target Population

The target population comprised of 2250 food handlers in the 15 selected African indigenous restaurants, their 15 supervisors as well as 2560 customers within the area of the study. According to the World Travel Guide (2014) there are 318 fully serviced restaurants serving food on the premises, with 150 of the establishments specializing in local and African cuisines and serving between 100 to 240 customers per day giving an average population as above (Eat Out, 2014). The number of food handlers in the selected African indigenous restaurants were ranging between 10 and 20 employees per establishment as per the list of employees working as food handlers, which was provided by the restaurants' management. This was an average total of 2250 food handlers (City

Council Records Office, 2015, Lists of Employees and Data, 2015) , with majority of these restaurants concentrated within the up market areas of Westlands, Upper Hill and the Central Business District, CBD. (City Council Records Office, 2015; World Travel Guide, 2014).

3.4 Sampling Technique and Sample Size

Sampling techniques involved a selection of subsets of individuals within a population with the aim of estimating its characteristics. The selected subset is a sample and the researcher generalized the findings to reflect the whole population.

3.4.1 Sampling Technique

Since the population was heterogonous, stratified random sampling was done in selecting the 15 African indigenous restaurants from the nine divisions in the area of study. Proportionate sampling strategy was applied in selecting food handlers in the African indigenous restaurants within the already existing divisions (strata) in Nairobi City County. This sampling method was considered since the food handlers, who were among the population of interest, had different numbers in each of the selected restaurants (City Council Records Office, 2015). Convenient sampling was done, also known as fortuitous, haphazard or accidental, to the available customers at the time of visit.

The sampling technique was considered because the restaurants relied on walk in customers. Purposive sampling method was applied in selecting the supervisors in the 15 African indigenous restaurants, who were directly involved in food production and service operations. Nairobi City County has 150 African indigenous restaurants distributed within its divisions. The 10% of the African indigenous restaurants

approximately 15 were used for the research since the study population is less than the ten thousand (Mugenda & Mugenda, 2008).

Table 3.1. Summary of Sampling Technique

Technique	**Area applied**	**Justification**
Stratified sampling	Selected African indigenous restaurants from the nine Divisions (Strata) in the study area.	Equal Representation of Indigenous restaurants,
Proportionate Sampling	Selected African Indigenous restaurants food handlers.	Different numbers in each restaurant
Convenient Sampling	Customers within the establishments.	Walk in Customers in hurry
Purposive Sampling	Selected Indigenous restaurants Supervisors	Those directly involved.

3.4.2 Sample Size

A total of 739 individuals participated in the study as shown in table 3.2 summary distribution of the respondents according to three categories of the targeted institutions.

Table 3.2: Distribution of the Respondents

Category of participants	**Population**	**Percentage**	**Sample Size**
Food handlers (Chefs/Cooks/Waiters/Waitress	2250	15%	340
Customers	2560	15%	384
Supervisors	15	100%	15
Total	**5050**		739

Sample size of the food handlers (respondents) was determined using Yamane (1967) formula as shown.

$$n = \frac{N}{1+N\,(e)^2}$$

where n is the sample size, N the population and e is the margin of error at 5%. The food handlers sample selected (n) was 340 respondents at 95% confidence level as shown in:

$$n = \frac{2250}{1+ 2250\ (0.05)^2}$$

$$= 339.6226415094$$

$$= 340 \text{ food handlers}$$

For customers, the number of participants were determined using Cochran (1963:75) formula as follows

$$n = \frac{z^2 pq}{(e)^2}$$

Where, n = Sample size

z^2 = Desired confidence level (95%)

e = Desired level of precision,

p = Estimated proportion of customers

q = 1-p.

For this study,

$$n = \frac{1.96^2\ (0.05)}{(0.05)^2}$$

n = (3.8416)100

n = 384 customers

Where n is the sample size, Z2 is the abscissa of the normal curve that cuts off an area α at the tails (1 - α equals the desired confidence level, e.g., 95%) 1, e is the desired level of precision, p is the estimated proportion of an attribute that is present in the population and q is 1-p. The value for Z score is in statistical table, which contain the area under the normal curve.

For Supervisors, the number of participants was 15 respondents obtained from the selected fifteen African indigenous restaurants, which means the entire population

3.5 Data Collection Instruments

The study used both primary and secondary data collection methods to collect the data. Primary data sources included using structured questionnaires, oral interviews and direct observation. Secondary sources of data involved retrieving information from research journals, books and other relevant literature**.**

3.5.1. Questionnaires

The researcher administered two questionnaires with open and close-ended questions, one to the food handlers and another to customers with the help of research assistants under his close watch. The food handlers randomly filled the questionnaires during the agreed time between the researcher and the management of the selected establishments. Thise questionnaire covered areas such as employees' demographic factors, activities of food handlers working in indigenous restaurants, their level of knowledge and training

regarding food hygiene practices, knowledge of factors influencing customers' choice of an indigenous restaurants and possible sources of food safety and hygiene information for food handlers.

The second questionnaire were administered to the customer at their convenience within their visit to the restaurant covering areas of demographic as well as factors that influence their choice of African Indigenous restaurants. Each Customer was required to fill the questionnaire individually at the restaurant on the spot by the researcher. The restaurants management assisted the researcher in clarifying the purpose for administering the questionnaire to customers. This helped the researcher to capture a sizeable number of customers who were reluctant to participate in the study. (Creswell, Ebersohn, Eloff, Ferreira, Ivankova, Jansen, Nieuwenhuis, Pietersen, Clark & Van der Westhuizen, 2010).

3.5.2 Observation Checklist

An observation checklist with indicators for food hygiene was to assess the general cleanliness of food, environment hygiene, rate of customer turnover and basic food handling practices of the food handlers was used. Food handlers grooming and close interaction with customers was observed. The observations were carried-out through participation as customers by the researcher and the research assistants using customized and standardized scoring scheme as per Codex Alimentarus food Hygiene general principles. The observation checklist was adapted from similar research studies (Fields, 2014; Kisembi, 2010), with intention to shedding more light on essential information that may not been captured by the questionnaires. The tool helped the researcher to capture, document and evaluate the reality shared by the respondents.

3.5.3 Interview Guide

An interview schedule guide assisted in collecting further data from the selected establishments' supervisors for the purpose of triangulation, as much of the data collected were in questionnaires and observation checklist. According to Mugenda (2008), observation was one of the most important and extensively used research instrument for data collection in the field of social sciences. The interview guide focused on the knowledge on food safety and hygiene measures and the training on food safety and hygiene measures initiated by the managements of the restaurants. The researcher administered the interview guide to the restaurants supervisors to gain insight and in-depth information left out by questionnaire. This increased reliability of the findings by assisting to test responses consistency with the questionnaires.

3.6 Pretesting

All the three instruments for data collection were pretested in three non- participating restaurants within the area of the study to eliminate errors and check on their suitability as research tools. Pretesting helped to establish instruments practicality in achieving the study objectives. The study objectives and responses were checked and analyzed flush out emerging errors. This ensured that respondents and the research assistants easily understood the final questions in the instruments. All ambiguous questions were filtered and an expected response rate established.

3.6.1. Instrument Validity

Validity is the quality of proportion or the measures of degree, to which the variable under study conforms to truthfulness, the established truth or knowledge (Patton, 2002). It refers to the extent the instruments actually measure, that which they intend to measure.

The instruments must ask the right questions as accurately as possible. According to Mugenda and Mugenda (2008) validity is the Meaningfulness and accuracy of inferences, based on research findings. Content validity of the research instruments was determined by pretesting the instruments and checking the responses against the objectives, conceptual framework and as guided by the supervisor.

The content selected for the instruments must be relevant to the study variables in order to achieve validity. Pretest was carried-out within the area of the study in non-participating establishments (Swahili Dishes, Aces Africana Bistro and Kula Korner) where relevant changes were made on data collection instruments. The research assistants were trained on data collection procedures including clarifying the purpose of the study to the respondents, making suggestions, observation skills and other vital inputs.

3.6.2 Instrument Reliability

This is the measures of degree, to which a research instrument gives results after repetition of subsequent trials (Mugenda & Mugenda, 2008). It is the quality of proportion or measure of degrees, to which the research instruments yield consistent results after subsequent tests. Pretesting of the research instruments was carried-out as a means of establishing instruments' reliability. After the first test, the tests retest technique was applied to determine the reliability coefficient. The instruments were administered to the same respondents (non-participating restaurants) after fifteen days as a test for reliability. Data from pre-testing exercise was coded and analyzed to identify and correct all emerging errors.

A reliability coefficient of 0.82 was obtained and this showed the questionnaires were reliable since coefficient of 0.80 or higher is recommended ((Brusse, 2004; Mugenda &

Mugenda 2008). The table 3.3 below presents the reliability test for all the four objectives of the study.

Table 3.3: Reliability Test

Variables	Cronbach's Alpha	No. of Items (n)
Hygiene Practices	0.84	18
Level of Awareness/Training	0.78	9
Determinants of Customer choice	0.81	13
Relationship between food handlers' hygiene practices and customer choice	0.83	8

3.7 Data Collection Procedures

The researcher obtained an official introductory letter from Kenyatta University Graduate School, to enable him request for a research permit from Ministry of Education, National Commission for Science, Technology and Innovation department. The permit and letter of introduction were presented to the management of selected indigenous restaurant to obtain permission to collect data from their staff and customers. The questionnaires were designed on the basis of research objectives and questions, which were standardized, validated and reliability tested. The time for data collection was agreed upon between the management of the selected establishments and the researcher. The questionnaires were accompanied by the introduction letter and research permit during the data collection on the agreed days, dates and times.

The researcher made prior visits to the establishments to familiarize with the study environment. The data collection was done over a period of three weeks between 20th September 2016 and 30th October 2016, with observation checklists filled during various

visits dates to allow maximum data collection. The researcher further conducted interviews to the Supervisors of the selected establishments as per their availability over the data collection period.

3.8 Data Analysis Technique

Both quantitative and qualitative data analysis techniques were used in the study since the data collected was both numerical and narrative.

3.8.1 Qualitative Data Analysis

Data collected using observation checklist and interviews consisted of non–verbal and verbal cues observed and heard by the researcher from the study environment and the responses from the supervisors. The observations and opinions data were grouped into broad topics they pertain to as per the objectives of the study, categorized, ordered, coded and summarized in compilation sheets for easy analysis. The data were entered in master sheets, counted and displayed in tables. Inferential statistics were further done on the qualitative data, to make inferences to a more general conclusion.

3.8.2 Quantitative Data Analysis

Data analysis was done using statistical packages for social sciences (SPSS version 21). Only fully completed questionnaires were verified, checked and analyzed. Descriptive statistics and inferential statistics were used to analyze data. For inferential statistics, statistical levels of significance were established with cut-off point of $p \leq 0.05$, (95%) confidence and significance levels. Pearson Chi-Square correlation coefficient tests were calculated to identify the correlation among Food Handlers food safety awareness, knowledge and training against the rate of customer turnover in African indigenous restaurants. The objectives were analyzed as follows in table 3.4 below.

Table 3.4: Analysis of Specific Objectives

Objective	**Analysis Method**	**Justification**
To investigate the food hygiene practices among food handlers working in African indigenous restaurants in Nairobi City County, Kenya.	Descriptive analysis	Description of the respondents
To assess the level of awareness regarding food hygiene requirements among food handlers and supervisors in African indigenous restaurants in Nairobi City County, Kenya.	Descriptive analysis	Description of the Scores
To determine factors influencing customers' choice of African indigenous Restaurants in Nairobi City County, Kenya.	Descriptive analysis	Description of Various Elements
To examine the relationship between food handlers' hygiene practices and customer choice of African indigenous restaurants in Nairobi City County, Kenya.	Inferential analysis (Chi square test)	Determine the relationship between variables
H0: There is no significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi City County, Kenya. H1: There is a significant relationship between the food handlers' hygiene practices and customers' of African indigenous restaurants in Nairobi City County, Kenya.	Inferential analysis (Pearson, Chi-Square test)	Determine any relationship between variables of interest.

3.9 Logical and Ethical Consideration

Permit for the research study was obtained from the Ministry of Education, National Commission for Science, Technology and Innovation department, authorizing data

collection from the selected African indigenous restaurants. The restaurants' management teams were contacted for permission as a means of obtaining informed consent. The researcher requested them to fill a consent form as a confirmation that they allowed the data collection from their staff and customers. The researchers made prior visits to the selected African indigenous restaurants to familiarize with the study environment and create rapport with the management. Food Handlers and customers were requested to voluntarily take part in the research study through verbal consent. All the participants' were guaranteed confidentiality by not disclosing their personal details such as name and staff numbers on data collection tools. The researcher upheld integrity by observing the covenant of confidentiality, openness and objective data collection to

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.0 Introduction

This section gives detailed findings of the data collected using questionnaires, interview guide as well as an observation checklist. As mentioned before, the study sought to establish the food handlers' hygiene practices as determinants of customers' choice of African indigenous restaurants in Nairobi County, Kenya. This section therefore presents the study findings outlined according to objectives the study. The study targeted a total of 739 participants constituting of 340 food handlers, 384 customers and 15 supervisors.

4.1 Response Rate

The study used three main categories of respondents and instruments to gather data which included Food handlers questionnaire, Customers Questionnaire and a supervisors interview schedule. The response rate obtained measured how well the targeted sample size was arrived at. A high response rate obtained minimized the chances of obtaining biased statistics and therefore the study findings valid and reliable as shown in table 4.1 below/.

Table 4.1: Response Rate

Category	**Expected Response**	**Actual Response**	**Percentage Response rate**
Food handlers (Questionnaire)	340	287	84%
Customers (Questionnaire)	384	238	62%
Supervisors (Interview Schedule/Observation Checklist)	15	15	100%
Total Response/Average Response rate	739	540	82%

All the supervisors participated in the study giving 100% response rate. For the food handlers and the customers, majority of them completed the questionnaires at a response rate of 83% and 62% respectively, and the total average response rate was 82%. These were achieved after data cleaning and selection of all fully filled in questionnaires. A non-response rate of 16% of food handlers' \ and 38% of Customers' questionnaires were incompletely filled and hence, left out during data cleaning. The non-response rate is attributed to limited time for food handlers and customers who were in a hurry especially during lunch-time. The response rates were significantly adequate for analysis and conclusions. The response rates agreed to Brewer and Rojas (2012) that any response of 50% and above is adequate for analysis.

The average response rate was higher and in agreement with similar studies in other developing countries including Guatamela 72.5% (Freeseet al. 2008); Nigeria 78.4% (Olufemi and Agboh-Bakkole, 2012); and South Africa (Martins and Anelich, 2010); Cameroon (Acho-Chi, 2012); and Uganda (Muyanja, 2011) all with 80.1%. According to Mugenda and Mugenda (2003), a response rate of 70 percent was acceptable as a good representation of a targeted population. A high response rate in this study, therefore, implied that the study used instruments and procedures that were clear, precise and within the acceptable number.

4.2 Demographic Information

The demographic information of the participants was gathered and the frequencies and percentages values were presented in form of tables

4.2.1 Demographic Information of Food Handlers

The study first determined the demographic information of the food handlers. The findings were presented in the table 4.2 as below.

Table 4.2: Demographic Information of Food Handlers

Category	Bracket	Frequency	Percentage
Gender	Male	166	58%
	Female	121	42%
	Total	**287**	**100%**
Age	18-20 years	34	12%
	20- 30 years	201	70%
	31-45 Years	29	10%
	Above 45 years	23	8%
	Total	**287**	**100%**
Education level	college	212	74%
	secondary	13	5 %
	university	43	15%
	primary	11	4%
	post graduate	8	2%
	Total	**287**	**100%**
Duration worked in the restaurant	Below 1 year	25	8.71
	1-2 years	46	16.3
	3- 7 years	167	58.4%
	7-10 years	27	9.5%
	Over 10 years	22	7.5%
	Total	**287**	**100 %**
Whether the participants had worked elsewhere	Yes	208	72.6%
	No	79	27.4%
	Total	**287**	**100%**
Duration worked before joining the restaurant	Less than a year	31	10.7%
	One year	73	25.5%
	More than 1 year	183	63.8%
	Total	**287**	**100%**

4.2.1.1 Gender of the Food Handlers

The first section presents the distribution of the participants by gender. The findings indicated that majority of the food handlers at 58% were males while 42% were females. These findings are in line with the study by Kisembi (2010) in a study on hygiene practices in urban restaurants in Thika town in which he found out that of all the staff working in the restaurants, majority were male (65%) while female staff were the minority (35%). This shows that most restaurants prefer engaging male staff in their operations as compared to Women. This could be because men are more flexible and can handle more labor intensive duties than women especially kitchen work. The findings were contrary to the study by Chipabika (2014) in an assessment of food hygiene practices among food handlers in restaurants in Kabwe urban district in Zambia where majority (76%) of the food handlers were females and (24%) were males.

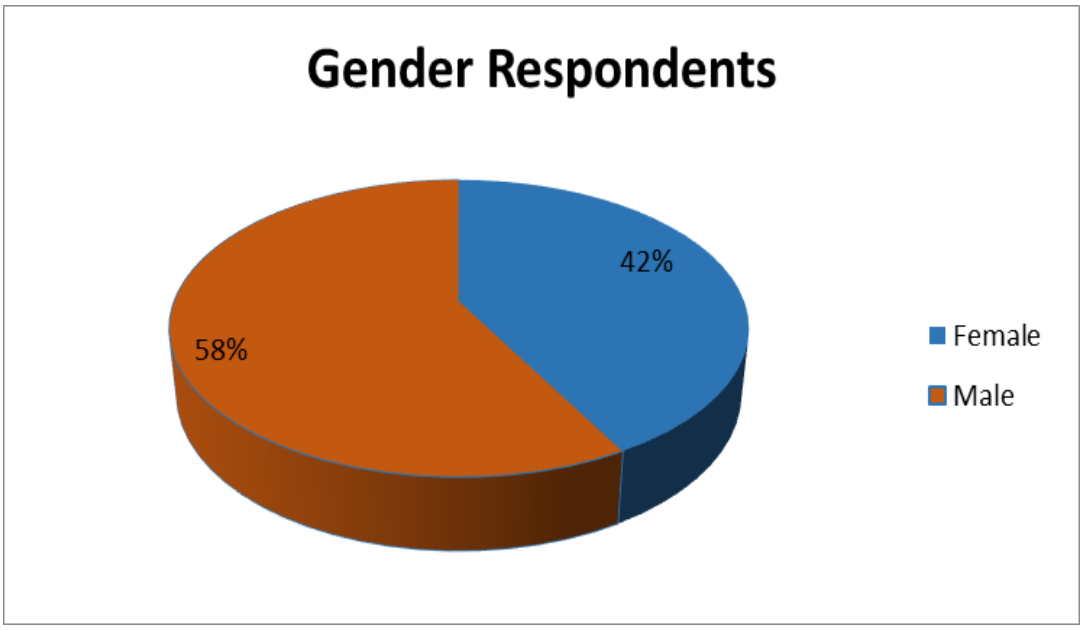

Figure. 4.1. Gender of the Food Handlers Respondents

4.2.1.2 Age Distribution of Food Handlers

The second section presents the distribution of the participants by age. According to the findings, majority of the participants 70% were between 20-30 years. About 12% were between18-20 years, 10% were 31-45 years while a small proportion of the participants at 8% were above 45 years. The findings show that most of the food handlers in general were young. This is line with Yoo (2012) study where food handlers of 18-30 years were 75.6% in Asian restaurants, 30-40 years were (20.1%) 40-50years were 4% and above 50 years Were 3.3%. This is because young people are more industries, are flexible, and are likely to contribute a lot to the growth and profitability of the restaurants.

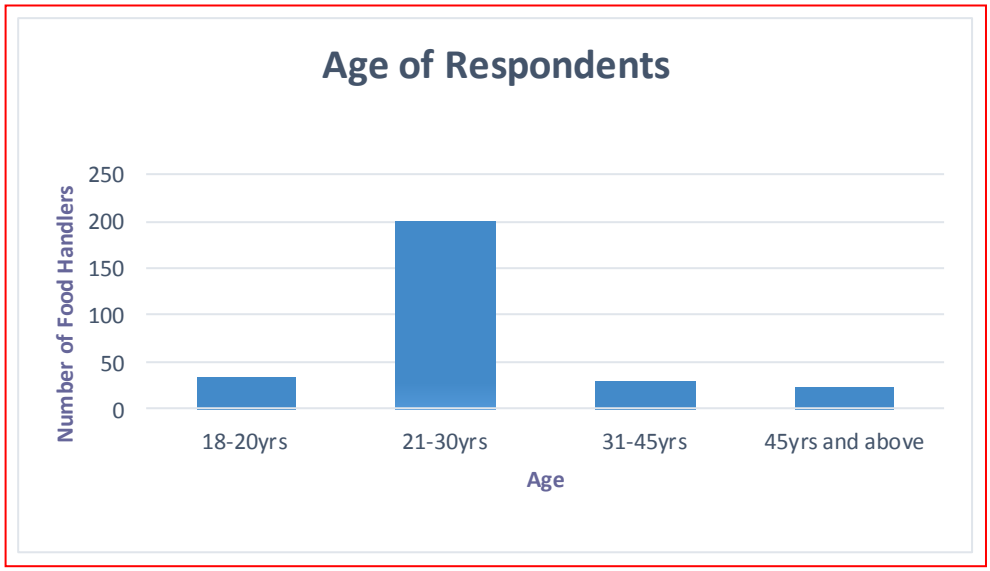

Figure 4.2. Food Handlers by Age Distribution

4.2.1.3 Education Levels of Food Handlers

The third section presents the distribution of the participants by education level. The findings revealed that majority of the food handlers at 74% had attained college

education. 15% had attained secondary education, 5 % had attained university education, and 4% of the food handlers (Kitchen staff) had attained primary education while a small proportion of the participants at 2% had attained post-graduate education level. These findings indicated that most restaurants' food handlers have attained college level education especially in areas of Food and Beverage indicating that they have attained relevant skills in carrying out their duties and relating with customers, with a small proportion with postgraduate education.

This revealed that restaurants rarely hire food handlers who have attained post-graduate education. Further Check showed that the food handlers with post-graduate education had worked for less than one year in the same restaurant. This is because most of them demanded very high wages and salaries and are unlikely to stay on the job for a long period. In addition, the restaurants do not prefer food handlers who have attained primary and secondary education. As reported by the management, the reason was that most of them do not relate well with customers and require in-depth training on food and beverage operations which was expensive.

The findings further revealed that those food handlers who indicated as holding primary education level had worked for more than ten years. In an interview with the supervisors, the frequent answer for the retention of these food handlers was their level of expertise and experience in preparation of local cuisines. These findings are in line with Kisembi (2010) in a study on hygiene practices in urban restaurants in Thika town in which he found out that about 44% of food handlers had attained college education and that the level of formal education was relatively high among the staff.

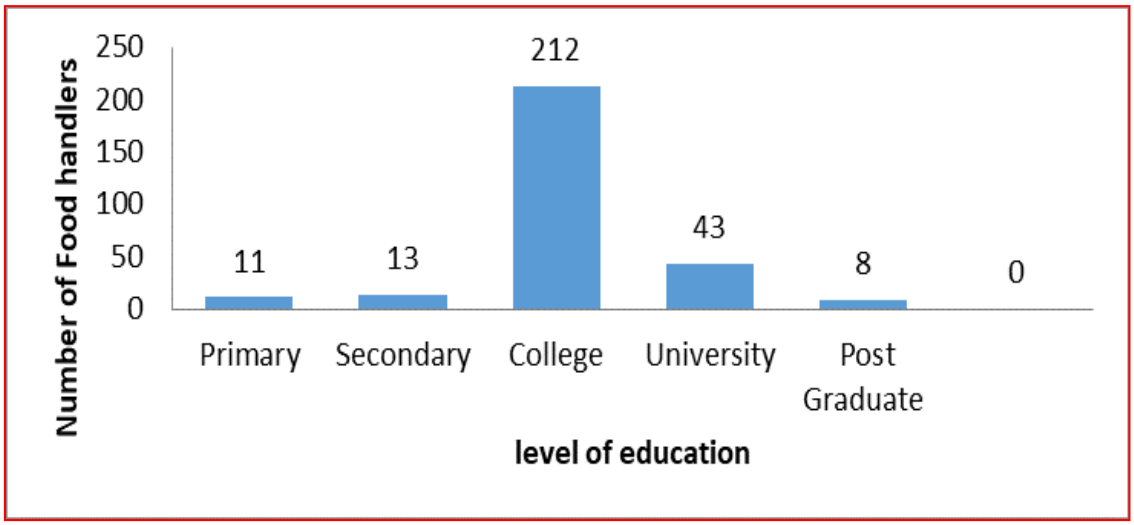

Figure 4.3 Level of Education

4.2.1.4 Working Experience

The fourth section presents the distribution of the food handlers by the duration they had worked in the restaurants. This study found out that 67.9% of the food handlers had worked in the restaurants for a long duration of time of over 3 years. Most food handlers (58.4%) had worked in the restaurants for 3-7 years. The participants were considered to have much knowledge pertaining to the operations of the restaurants and thus suitable to give the data for the study. Only a small proportion of the food handlers (7.5%) had worked in the current restaurants for more than 10 years. This is partially in line with Nyamari (2011) findings where most food handlers (43.4%) had worked in the same restaurants set-p for 1-5 years, about 28% less than 1 year and 28.5% for more than 5 years.

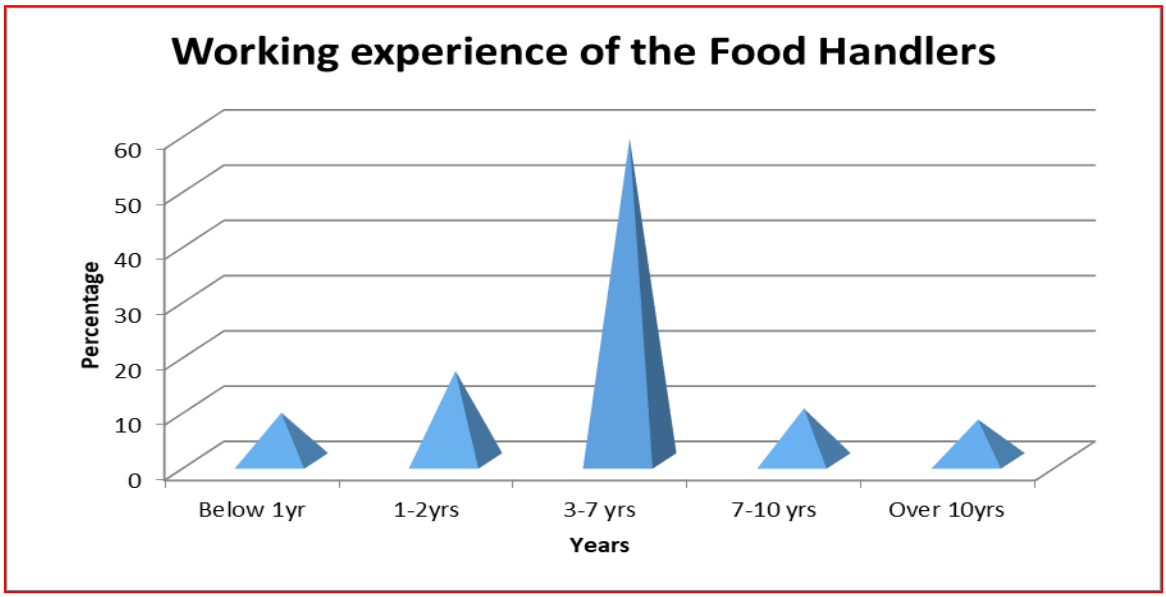

Figure 4.4: Working Experience of the Food Handlers.

4.2.1.5 Duration Worked Else Where

The study also enquired whether the food handlers had worked elsewhere before joining the current restaurants and for how long. The findings revealed that most of the food handlers (72.6%) had worked elsewhere. This indicated that majority of the food had good experience in food handling. Only a small proportion of the food handlers (27.4%) had not worked elsewhere before joining the restaurants. Most of these were fresh graduates with most of them undertaking internship. This implies that most food handlers have prior knowledge of the operations and hygiene standards of the restaurants in the area of study. The study further sought to determine the duration the food handlers had worked before joining the current restaurants.

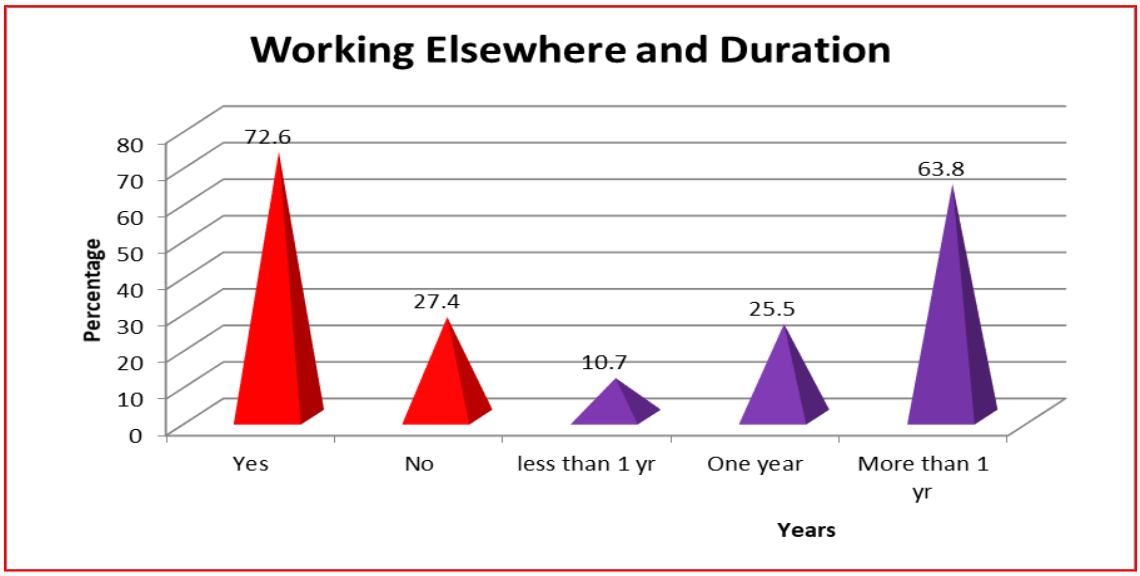

Figure 4.5. Working Elsewhere and Duration

The study revealed out that majority of the food handlers had worked for a long duration of time before joining the restaurants. Most food handlers (63.8%) had worked for more than one year before joining the restaurants. About 25.5% had worked for one year while 10.7 % had worked for less than one year. The findings reveal that food handlers had great experience in food handling practices. The findings further revealed that the restaurants retain most of their food handlers.

This is supported by Hui, Hishamuddin, Abdul, Kwai and Lay (2016), study on assessment of food safety knowledge, attitude, self-reported practices, and microbiological hand hygiene of food handlers Malaysian restaurants. In this study, more than half (53.7%) had worked over 2 years' elsewhere in the food service industry while 25.4%) were fresh graduates and first-time employees.

4.2.2 Demographic Information about the Supervisors

The study first determined the demographic information of the supervisors. The findings were presented in the table 4.3 below

Table 4.3: Demographic Information of Supervisors

Category	Bracket	Frequency	Percentage
Gender	Males	9	60%
	Female	6	40%
	Total	15	100%
Age	18-20years	0	0
	21- 30years	4	27%
	31-45 years	10	67 %
	Over 45 years	1	6%
	Total	15	100%
Education level	College	12	80%
	Secondary	0	0%
	Primary	0	0%
	Post graduate	3	20%
	Total	15	100%
Duration worked in the restaurant	1-3 years	3	20%
	3- 7 years	9	60%
	7-10 years	1	6.7
	Over10 years	2	13.3
	Total	15	100 %
Whether the participants had worked elsewhere	Yes	13	86.7%
	No	2	13.3%
	Total	15	100%
Duration worked before joining the restaurant	Less than a yea	2	13.3%
	One year	4	26.7%
	More than one	9	60%
	Total	15	100%

4.2.2.1 Gender Distribution

The section presents the distribution of the supervisors by gender. According to the findings, majority (60%) of the supervisors were also males. Female supervisors constituted 40%. This shows that most restaurants prefer male supervisors to female due to flexibility in their schedules. Kisembi (2010) found out that the staff working in these restaurants were mostly male (65%) as compared to female (35%) thus supporting the findings. This shows that most indigenous restaurants prefer engaging male staff in supervisory roles in their operations as compared to female. This could be because the male gender is presumed as more flexible, aggressive, can work at odd hours and handle more labor-intensive duties than women.

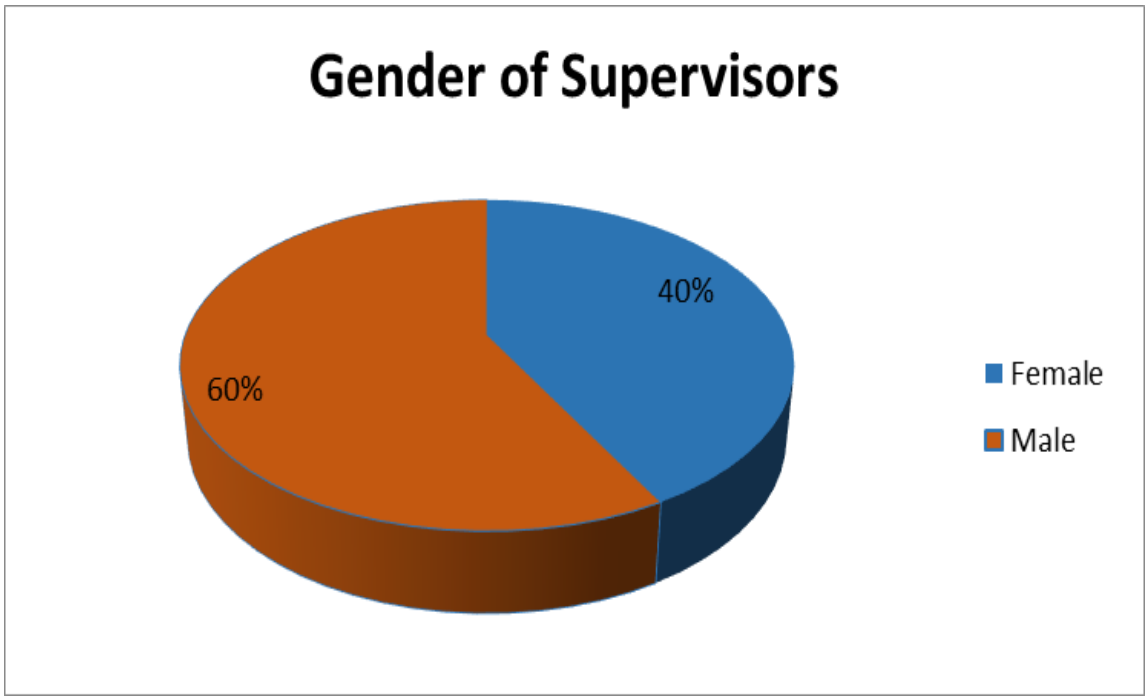

Figure 4.6. Gender Distribution

4.2.2.2 Age Distribution

The second section presents the distribution of the supervisors by age. The findings reveal that majority of the supervisors (69%) who participated were between 31- 45 years, 23.40% were between 20-30 years while a small proportion of them at 14.60% were over 45 years. This is evident that most restaurants prefer middle-aged supervisors. This is because they are flexible and relate well with customers and the food handlers. This is in line with Hui, et. al (2016), finding that approximately 64.2% of the supervisors in a restaurant set-up were aged from 31 to 41 years old with only 10% in age below 30 years.

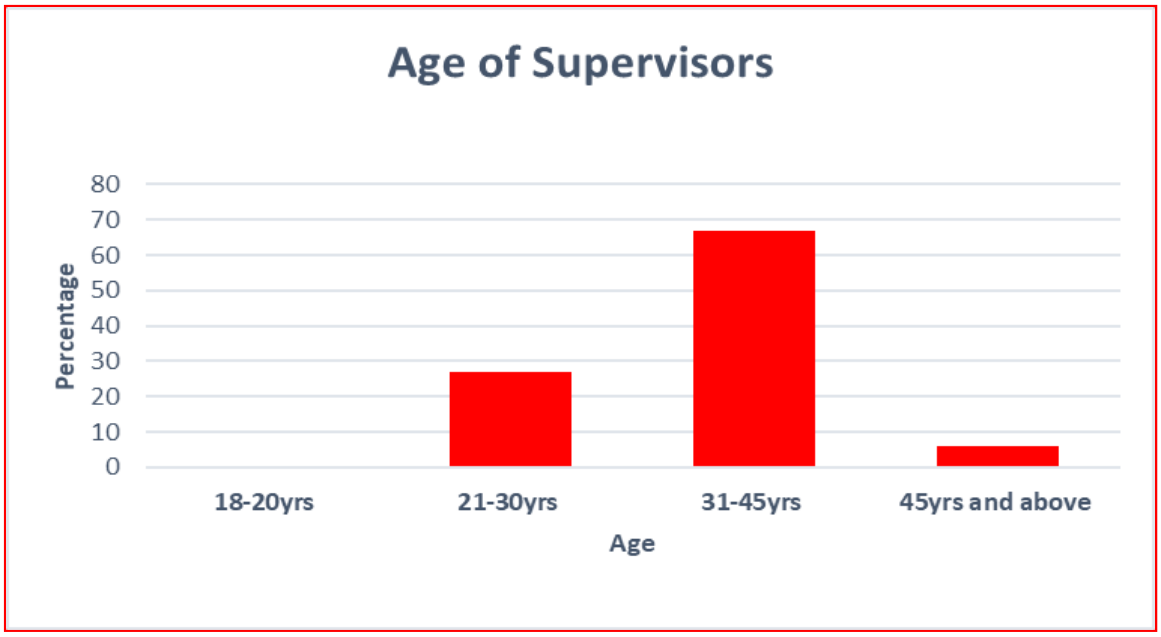

Figure 4.7. Age Distribution of Supervisors

4.2.2.3 Education Level of Supervisors

On education, the findings in the third section of the table indicated that all the supervisors had college and above levels of education. Majority of them (80%) had college and degree level education while 20% had attained post graduate education. This shows that the level of formal education is relatively high among the supervisors in indigenous restaurants in Nairobi City County.

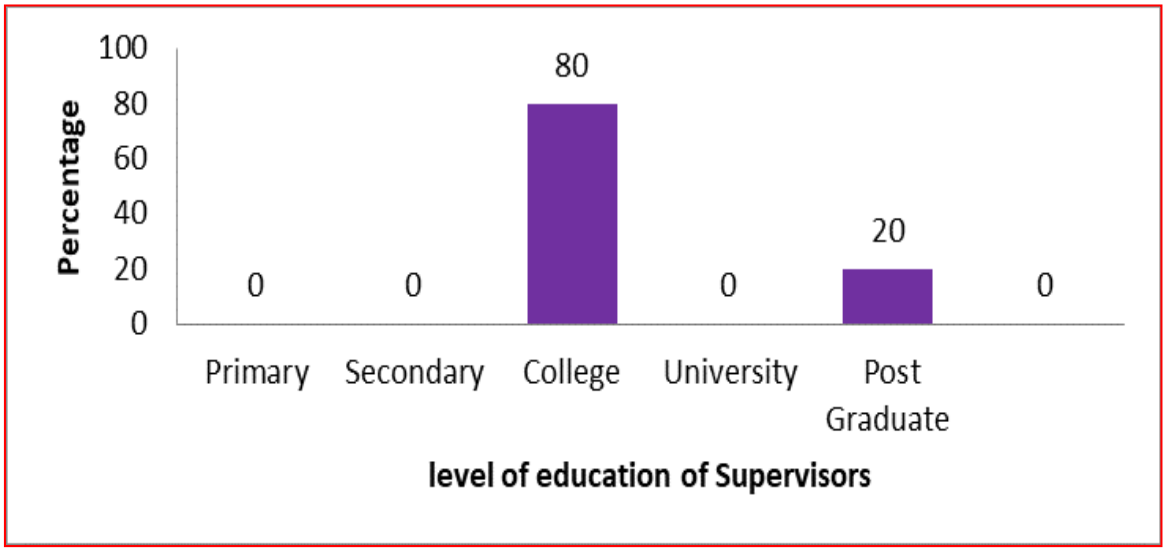

Figure 4.8. Level of Education of Supervisors.

4.2.2.4 Duration of Work in the Restaurant.

Most supervisors (60%) had worked in the restaurants for 3-7 years as indicated in the fourth section of the table. This indicates that they had great experience and enough knowledge pertaining to the operations of the restaurants. The findings further revealed that majority (86.7%) of the supervisors reported that they had worked elsewhere while 13.3% reported that they had not.

This revealed that most of them had sufficient experience with regard to the operations of the restaurants. The study was supported by Nyamari (2011) findings that majority of

the food handlers and supervisors had above high school education with 73.5%; 30.6% high school education and 42.9% higher education respectively. In addition to this, 43.4% of the respondents had 1 to 5 years of work experience as cooks in catering establishments (41.1%), and domestic workers (20.7%) before their current roles as supervisors.

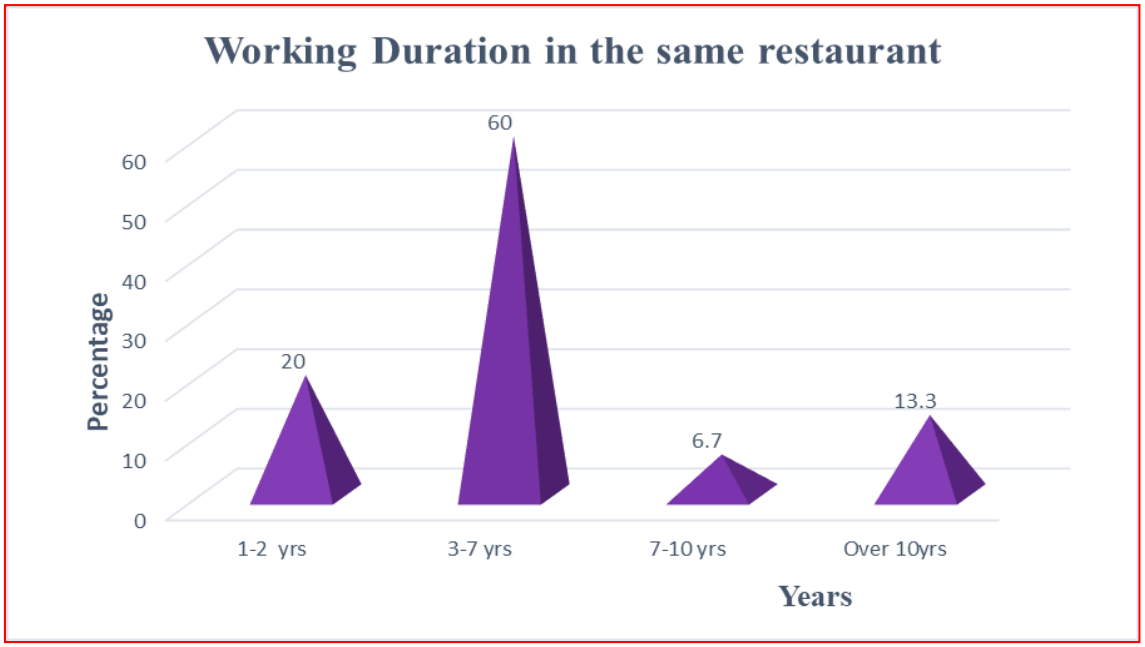

Figure 4.9: Duration of Working in the Same Restaurant

4.2.2.5 Work Experience

The study further found out that majority (60%) of the supervisors who participated in the study had worked for more than one year before joining the restaurants, 26.7% had worked for one year while 13.3% had worked for less than a year. The findings indicated that the supervisors were much experienced on matters pertaining to the restaurants and hence were considered to have good supervisory skills to manage the operations. In line with these findings is a study by Out (2014) where 85.6% of supervisors had worked

elsewhere for more than 1 year, about 12.7% had worked elsewhere for more than 5years and 1.7% of them for less than 1year.

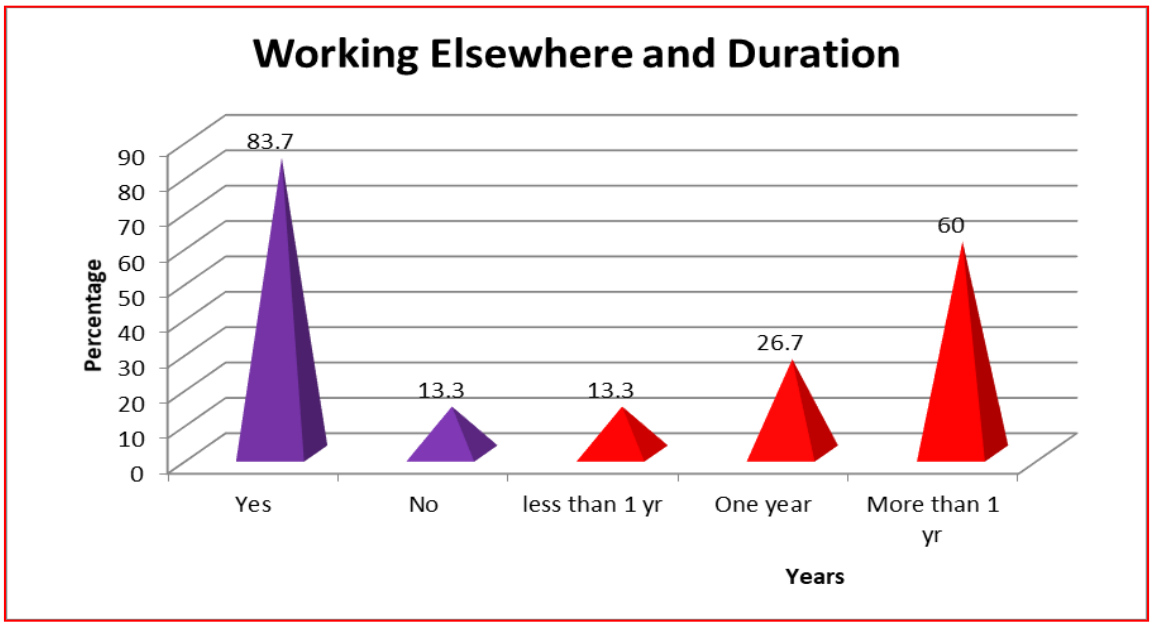

Figure 4.10 Work Experience

4.2.2.6 Food Hygiene Compliance by African Indigenous Restaurants

The study finally found out that all the supervisors (100%) agreed that the restaurants had complied with food hygiene measures as shown in table 4.4 below. From the interview, the predominant similar responses summary was as follows:

"For us to ensure that we serve safe food to the customers, the management has shown degree of commitment by providing fresh ingredients on time, maintaining high standards of cleanliness and ensuring no employee work while sick or without a food handlers' certificate." (Supervisor 1- African Indigenous Restaurants).

The findings are in line with Lee (2012) findings where 100% of supervisors in Asian and Mexican restaurants agreed that the establishments had complied with food hygiene measures.

Table 4.4: Food Hygiene Compliance

Food safety and hygiene measures/compliance in place in by the establishment.	Yes	15	100%
	No	0	0%
	Total	15	100%

4.2.3 Demographic Information of the Customer

The study sought the general demographic information about the customer participants. The findings were presented in the table 4.5.

Table 4.5: Demographic Information of the Customer

	Bracket	**Frequency**	**Percentage**
Age	18 – 25	17	7%
	26 – 35	52	22%
	36 – 45	74	31%
	46 – 55	81	34%
	Over55 years	14	6%
Total		**238**	**100%**
	Type	Frequency	Percentage
Gender	Male	90	38%
	Female	148	62%
Total		**238**	**100%**
Nationality	Kenya	**186**	78%
	African	**29**	12%
	Europe	6	3%
	USA	5	2%
	Asia	10	4%
	Others	2	1**%**
Total		**238**	**100%**
Visits to the Restaurants	First Visit	**24**	10%
	2 – 5	**33**	14%

	6 – 10	**55**	23%
	> 10	**126**	53%
Total		**238**	100%

4.2.3.1 Gender and Age of Customer Participants

According to the findings, 18 – 25 age brackets constituted 7%, 26 – 35 age brackets constituted 22%, 36 – 45 age brackets constituted 31%, 46 – 55 age brackets constituted 34% and lastly age bracket rated as over 55 years received a mere 6%. These findings revealed that most of the young people and the elderly do not prefer dinning in the African indigenous restaurants. About 38% of the customers were male and 62% were female. In terms of age Yoo (2012) findings showed 9% of our respondents were below 20 years of age, 14.0% were between 21 and 25, 59.3% been the highest age range, 20.3% of respondents were between 26 and 30 years, and 6.25% were 30 and above.

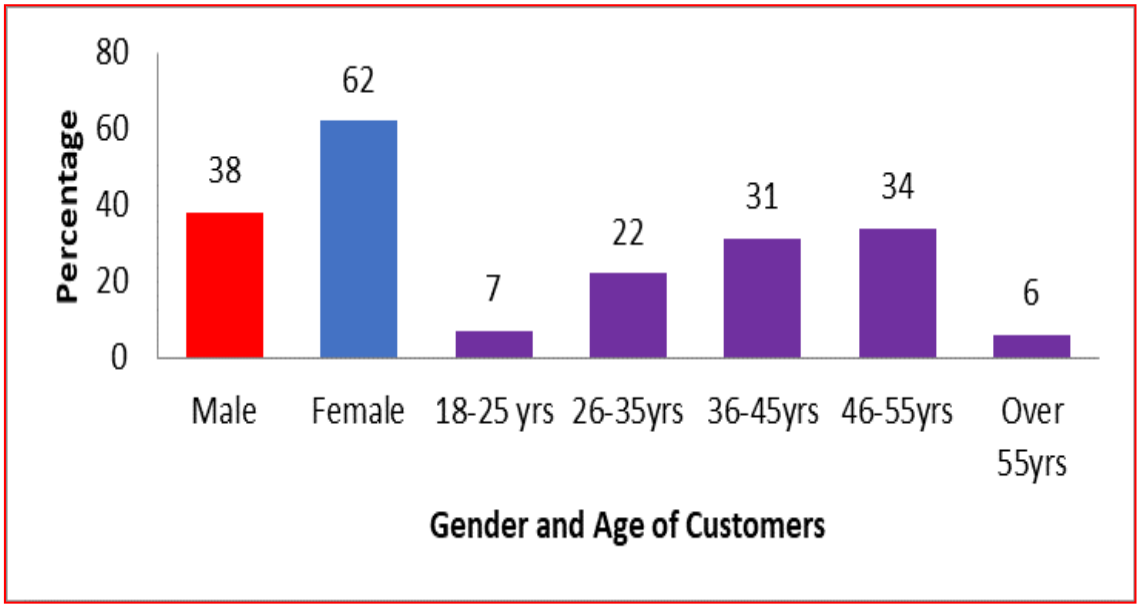

Figure 4.11 Gender and Age of Customers

4.2.3.2 Nationality of Customer Participants

From the findings, majority (78%) of the customers dining in the restaurants were Kenyan. 12% were from other parts of Africa, 4% were Asians, 3% came from Europe, 2% were from USA while 1 % were from other parts of the world. The findings revealed that most foreigners do not prefer dinning in African indigenous restaurants. This implies that the vast majority of indigenous restaurants customers are local and familiar with the environment. This is an indication that the response given was factual and from real experiences. Getting the highest response from the Kenyan, gave reasonable ground to dealing with actual customers who have been visiting the restaurants for a long period time. The findings are in line with Yoo (2012) study where male customers visiting local restaurant were (39.1%) and female were (60.9%). This implies that the indigenous restaurants had a special niche in female gender customers as compared to male and as

such must be providing high quality service to maintain such a segment of customers.

Figure 4.12 Indigenous Restaurants Customers' Nationality

4.2.3.3 Number of visits by Customer Participants to the Same Restaurant

Finally, the number of visits the respondents had visited the restaurants were determined. The findings revealed that majority (53%) of the participants had visited the restaurants for more than 10 times. 23% had visited the restaurants for 6-10 times, 14% had visited the restaurants for 2-5 times while a small percentage (10%) had visited the restaurants for the first time. The findings revealed that majority of the participants were regular customers in these restaurants. This implies that the vast majority of indigenous restaurants customers are frequent customers and familiar with the environment hence the response given was factual and had high degree of truth. The findings are in line with

Yong, Siang, Lok and Kua (2013) results that majority of the customer respondents (54.2%) had visited the establishment more than 10 times, 25.8% for 8 times and 20% of respondents had less than 5 times visits.

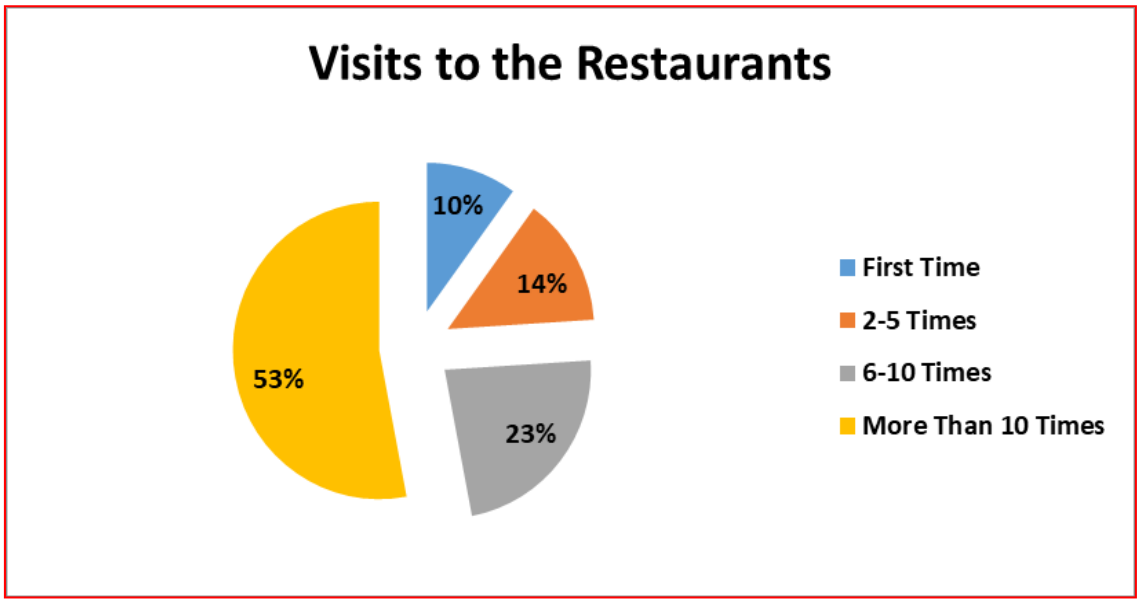

Figure 4.13 Number of Customers Visits to Indigenous Restaurants

4.3 Food Handlers' Hygiene Practices

This objective determined the African indigenous Restaurants food handlers' hygiene practices. This was achieved by determining the kind and quantity of food materials received and preservation, methods of food holding cooked food, and environmental hygiene.

4.3.1 Quantity of Food Material Received.

The study determined how the restaurants received food supplies. The findings were presented in the table 4.6 below showing the quantity received.

Table 4.6: Quantity of Food Material Received.

Quantity	Frequency	Percentage
Below 50kg	8	53.30%
50-100kg	4	26.70%
Above 100kg	3	20%
	15	**100.00%**

The findings revealed that the majority of the participants (53.30%) received food materials in small quantities (below 50kg). About (26.7%) of the restaurants received food materials in 50kg-100kg while (20%) of the restaurants received food materials in over 100kg. This revealed that food orders were flexible and therefore the purchasing of food materials depended on the orders. From the observation checklist summary, most of the restaurants did not have spacious and well-conditioned storage facilities such as cold room and dry stores with racks and they therefore preferred receiving food material in small quantities. Akinyele (2010) noted that urban restaurants concentrate on creating space for the dining area to increase the customers' sitting capacity of an indigenous restaurant for maximum revenue collection.

4.3.2 Food Materials Handling

The study further sought to determine what the restaurants do after they receive foods. The study found out that weighing and sorting of food materials was done in all other restaurants. The common response was as follows;

"*Once the groceries are delivered, they are weighted and sorted to ensure they are of the required quantity and quality. Fruits and vegetables are washed before storage and use. It is very unfair to receive stale food materials when you know it in your heart that is the*

management and supplier have agreed on minimum quality expected." (Supervisor 2-African Indigenous Restaurants).

From the findings, observation and statement above, it is clear that the restaurants received much of the food materials in minimum quantities as well as observed a high degree of hygiene in their sourcing and receiving section. This implied that high hygiene standards were observed before the materials are prepared and offered for consumption to customers.

These findings are similar to a study by Muinde (2010) on Hygiene Practices in Urban Restaurants in Thika Town**,** which found out that food materials collected from the farmers were adequately and carefully sorted and cleaned, before preparation for the public consumption.

4.3.3 Preservation of Food Materials

The study determined the food preservation methods used by the restaurants. The findings were presented in table 4.7 and the figure 4.14 below.

Table 4.7: Food Material Preservation and Storage Measures

Restaurants	Cold Storage %	Dry storage %
12	80% Deep freezers	100%
2	18% Refrigerators	100%
1	2% None	100%
15	**100%**	**100.00%**

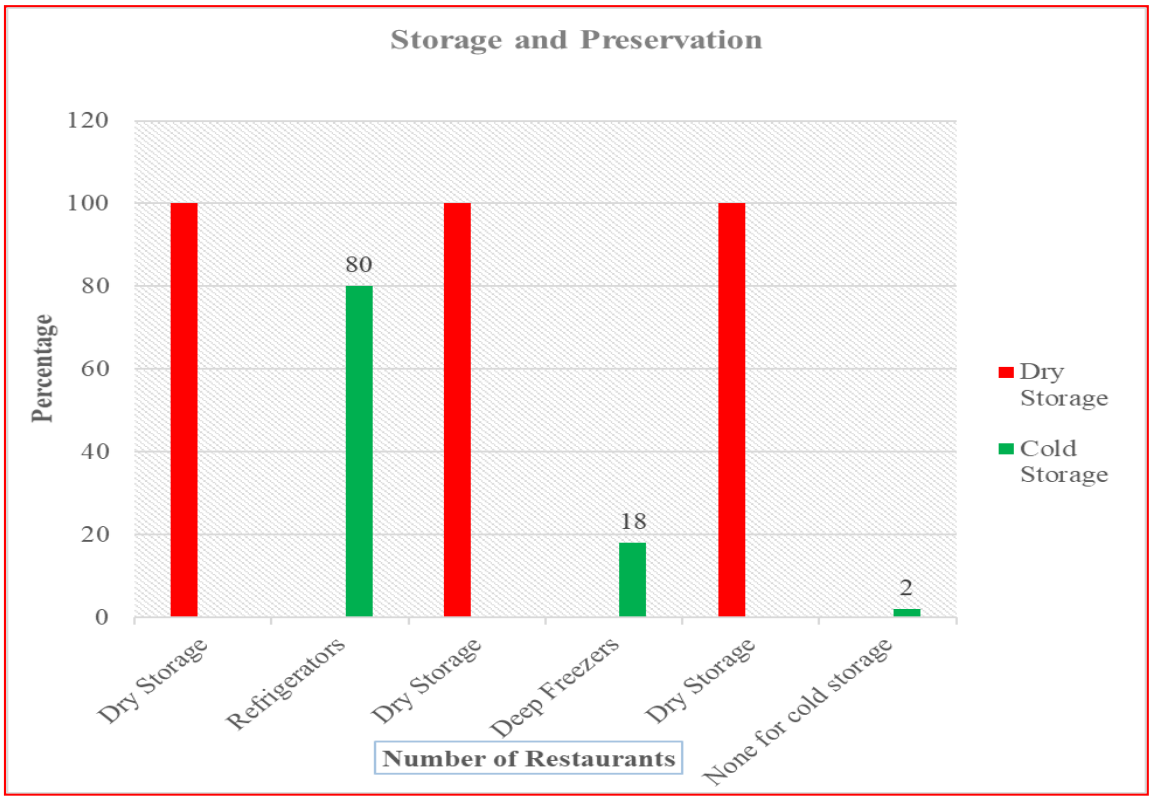

Figure 4.14: Food Storage and Preservation Measures

In general, the findings revealed that all selected indigenous restaurants had a dry storage space, and most restaurants (80%) used refrigeration as a means of preservation of food materials in addition to dry storage. About 18% of the restaurants used freezing method in addition to dry storage while a small proportion of the participants (2%) used only dry storage as a means of storage, none for cold storage. The food preservation methods used in the restaurants varied depending on the kind of facilities available in the restaurants. The study found out that foods were stored in in well ventilated rooms with normal room temperature while other perishable foods are stored in cold rooms.

The available resources indicated that the restaurants stored food materials well which prevented the supplies from going bad. This implies that the restaurants observed proper

storage hygiene for all the food materials which go further in ensuring quality of prepared food. It is a sign that restaurants had some sort of critical control points applied in their operation. The findings are in line with Kisembi (2010) study where majority (70%) of restaurants were found to use refrigeration as a means of food preservation in addition to dry storage.

4.3.4 Methods used to Hold Cooked Food

The study sought to determine the food holding precautions practiced by the food handlers in the restaurants before the food is served to customers. The findings were presented in the chart below

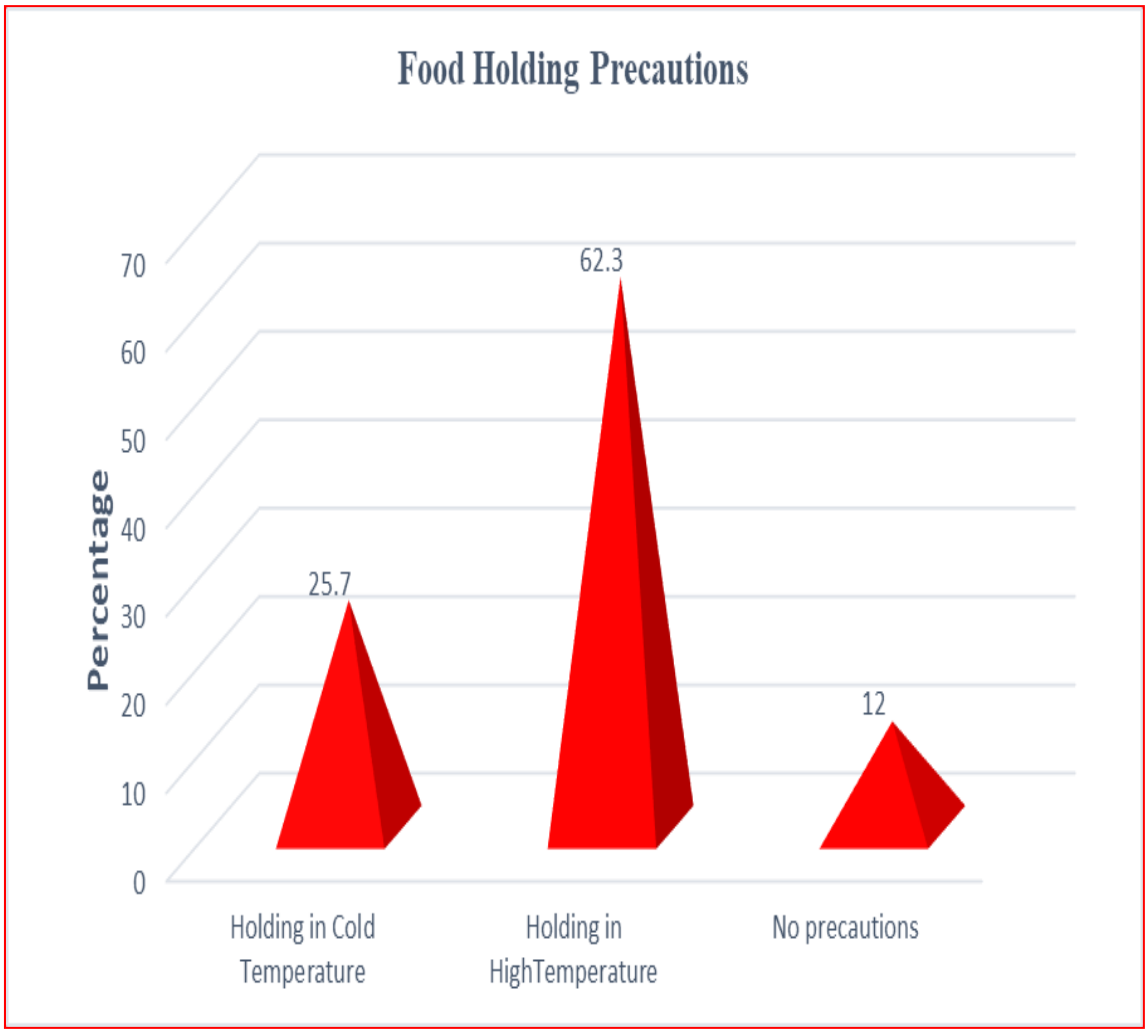

Figure 4.15: Methods Used to Hold Cooked Food

The findings indicated that most restaurants (62.30%) were storing food in high temperatures for all hot dishes and (25.70%) were storing food in cold temperatures for dishes served cold. A sizeable proportion of the restaurants (12%) were not taking any food holding precautions. Proper food holding precaution was fairly practiced in most restaurants (62.30%) in high temperatures after cooking then holding. This was due to the high level of literacy with the customer demands for hot food. A study in China (2005)

showed that general hygiene standards were not well-observed in local cuisine establishment as compared to formal restaurants.

Muinde and Kuria (2005) noted that most people in local restaurants who were served with cold foods experienced some degree of food poisoning. This means that cold storage of food is not the best practice among the indigenous restaurants and as such, food should be held at correct temperature to prevent bacterial and virus growth which contaminate it. The left overs were preserved frozen in separate refrigerators from the one used to hold cold food in 64% of the restaurant. 34% of the establishments indicated that they fed left overs to the staff to minimize on the need for storage. The study by Nyamari (2011) showed that 82% of establishment used refrigeration for cold storage of left overs with 18% ensuring that zero left over by using these as staff meals.

4.3.5 Restaurants' Environment Hygiene

In order to obtain firsthand information on restaurants' hygiene status, the researcher undertook personal surveys of the selected restaurants' facilities. The observation checklist had the critical areas listed systematically and catalogued as shown in table 4.8 below.

Table 4.8: Restaurants Environment Hygiene (Hygiene Practices)

Observation (n=15)	Status	Frequency	Percentage
Compound	Clean	9	60%
	Fairly clean	4	26.7%
	Dirty	2	13.3%
	Total	15	100 %
Liquid waste	Well collected	12	80%
	Not well collected	3	20 %
	Total	15	100 %
Solid waste	Well collected	13	86.7 %
	Not well collected	2	13.3%
	Total	15	100%
Smoking in the kitchen	Allowed/Silent	0	0%
	Prohibited	15	100 %
Smoking in the restaurant	Allowed/smoking zones	14	93 %
	Prohibited	1	7 %
	Total	15	100%
Grooming of staff	Proper Grooming	13	90 %
	Improper Grooming	2	10 %
	Total	15	100 %
Crockery and Utensils	Dirty	6	40 %
	Clean	8	53.3 %
	Fairly clean	1	6.7%
	Total	15	100 %
Health & safety license	Issued	15	100 %
	Not Issued	0	0%
Food stores and cold rooms	Dirty	4	27 %
	Clean	8	53 %
	Fairly clean	3	20%
	Total	15	100%
Hand wash basins	Available	15	100 %
	Not available	0	0%
Customer flow level	High	11	73 %
	Low	4	27 %
	Total	15	100%
Floor clean at time of visit	Yes	15	100%
	No	0	0%
Adequate lighting and ventilation in Restaurant/Kitchen	Yes	15	100%
	No	0	0%

On environmental hygiene, 60% of the operators had clean compounds (no litter), 26.7% of them had fairly clean compounds while a small proportion of them (13.3%) had dirty compounds characterized by presence of litter and dirty dustbins. About 80% of the restaurant operators had liquid waste well collected while only 20% had liquid waste not well collected. Most of the restaurants (86.7%) had solid waste well collected while only 13.3% had their solid waste uncollected at the time of visit. According to Mclauchlin and Little, 2007:, Fosket and Ceserani, 2007), accumulated waste in food production areas attract and serve as a breeding space for pests, rodents and flies, in addition to contaminations, accidents, fire hazard, unpleasant odors and pollution, hence the requisite for immediate waste clearing and proper management. In this study, the majority of the premises showed compliance with the requirement and the researcher assumed that this was a routine practice.

In all the restaurants, smoking in both kitchen and dining rooms was prohibited. However, 93% of the restaurants had designated smoking zones. All the restaurants had health and safety licenses as required by the Public Health Act (GoK, 2005). All had hand wash basins as recommended by McLauchlin and Little (2007) in their recognition that the food hander's hands normally come into contact with wastes, recommended that sanitary and hand washing facilities are made available particularly when placed adjacent to the toilet cubicles. All the restaurants visited had adequate lighting and ventilation.

Staff grooming was proper in most (90%) of the restaurants as they had proper uniforms as required by the public health law. However, 10% of the food handlers had improper grooming characterized by lack of headgear and wearing of open shoes. This was a great violation of food hygiene regulations and as such, there was no guarantee of food hygiene

in these few restaurants. Failure to uphold and maintain expected degree of hygiene and personal cleanliness contaminates food (McLauchlin and Little, 2007). Their study further pointed out strongly that the use of protective clothing should be encouraged as it helps more to protect food from the food handlers.

From the observation Checklists, Crockery, utensils and some equipment were dirty in 40% of the restaurants, clean in 53.3% of the restaurants, and fairly clean in 6.7% of the restaurants at the time of visit. Food stores and cold rooms were dirty in 27% and clean in 53% and fairly clean in 20% of the restaurants. This is slightly higher that Nyamari (2011) findings where about 31% of the establishments had sanitized and cleaned utensils and, only about 9% of them had drying racks for the cleaned and sanitized equipment. This implies that indigenous restaurants observed some degree of hygiene although not sufficient. It also indicated that cleaning procedures were not observed

Customer flow level in most (73%) of the restaurants was observed to be high while 23% had low turnover. This implies that the researcher obtained data from real customers who have been frequently visiting the establishments making it more reliable. This is totally in line with Kisembi (2010) where the study found out that the number of customers visiting most urban restaurants in Thika were (Many 73%) and only few (23%) in some restaurants.

4.4. Food Handlers' Awareness of Food Hygiene Requirements

The purpose of this research objective was to ascertain if the food handlers and the supervisors are cognizant of the food hygiene requirements guiding their operations. This was achieved by determining the food handlers and supervisors' knowledge on various hygiene aspects. The enquiry considered the following: importance of food

hygiene training, cross contamination, prevention of food related illnesses and availability of hygiene information sheet posted within the establishments. The findings were tabulated as below include

Table 4.9: Awareness of Food Handlers on Food Hygiene Practices

	Frequency	Percentage
Food hygiene information sheet		
Posting of food hygiene information sheet	169	58.96 %
No Posting of food hygiene information sheet	118	41.04%
Total	**287**	**100%**
Importance of food Hygiene Training		
Very Important	102	35.3%
Important	125	43.6%
Don't know	39	13.6%
Not Important	21	7.5 %
Total	**287**	**100%**
Poor hygiene can cause cross contamination		
Strongly agree	57	20%
Agree	153	53%
Neutral	29	10%
Disagree	34	12%
Strongly disagree	14	5%
Total	**287**	**100%**
Good hygiene practices Prevent diarrhea		
Strongly agree	63	22.25%
Agree	149	52.02%
Neutral	26	8.96%
Disagree	37	12.72%
Strongly disagree	12	4.05%
Total	**287**	**100%**

4.4.1 Food Hygiene Sheet.

The findings indicate that, with regard to the hygiene information sheet, majority (58.96 %) of the restaurants had posted it within the establishment while a sizeable proportion of

the restaurants (41.04%) had not posted it. This implied that most of the food handlers might not have had access to vital information related to their work.

4.4.2 Importance of Food Hygiene Training

With regard to the importance of food hygiene training, the majority of the participants (43.6%) reported that food hygiene training is important, about (35.3%) said that hygiene training is very important, (13.6%) said that they don't know whether it is important while a small proportion of the participants (7.5%) reported that food hygiene training is not important. This implied that a sizeable number of food handlers have no idea of food hygiene regulations and training requirements.

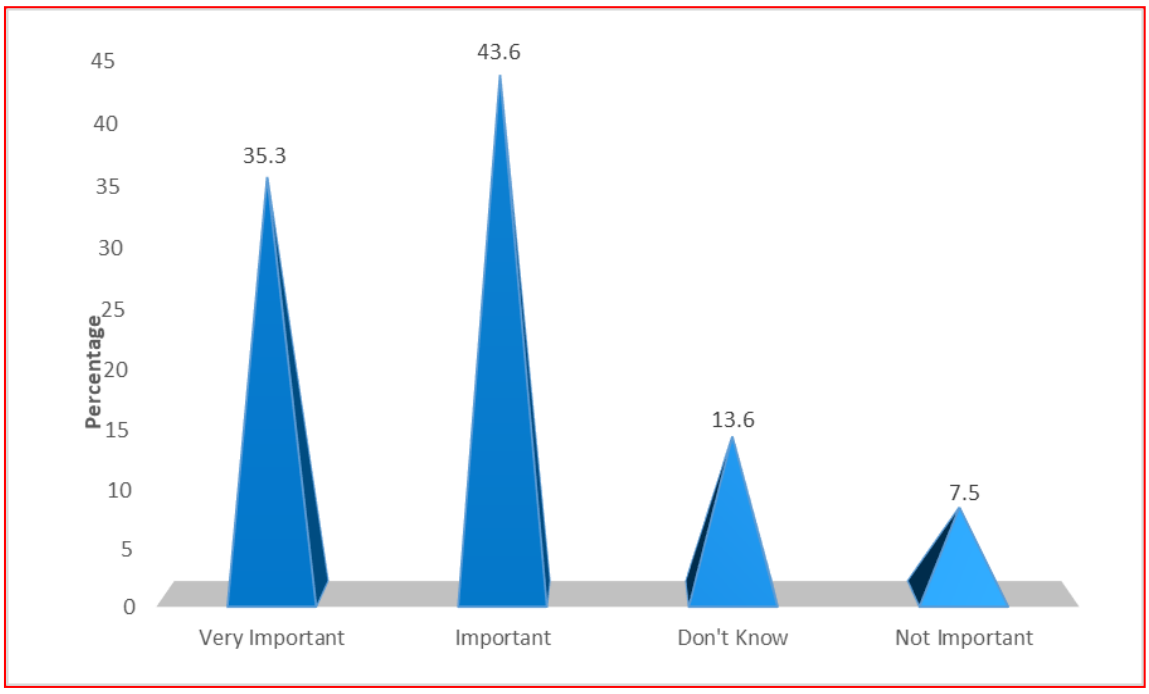

Figure 4.16 Importance of Food Hygiene Training

4.4.3 Causes of Cross Contamination

With regard to food contamination, majority of the participants (53%) agreed that poor hygiene can cause cross contamination, (20%) strongly agreed, (12%) disagreed, (10%) were neutral, while a small proportion of the participants (5%) strongly disagreed that poor hygiene can cause cross contamination.

4.4.4 Prevention of Food Related Illnesses

The findings further revealed that the majority (52.02%) of the participants agreed that good hygiene practices prevent diarrhea. About (22.25%) strongly agreed, (12.72%) disagreed, (8.96%) were neutral, while a small proportion (4.05%) of the participants strongly disagreed that good hygiene practices prevents diarrhea. The above findings are higher than and in line with Lee, Niode, Simonne, and Bruhn, (2012) study results where 44% of poor food handlers' hygiene causes food contamination that often results into illnesses such as diarrhoea, nausea, vomiting and sometime death. This implied that food hygiene practices and prevention of food related illness were no longer a new phenomenon in the restaurant operations.

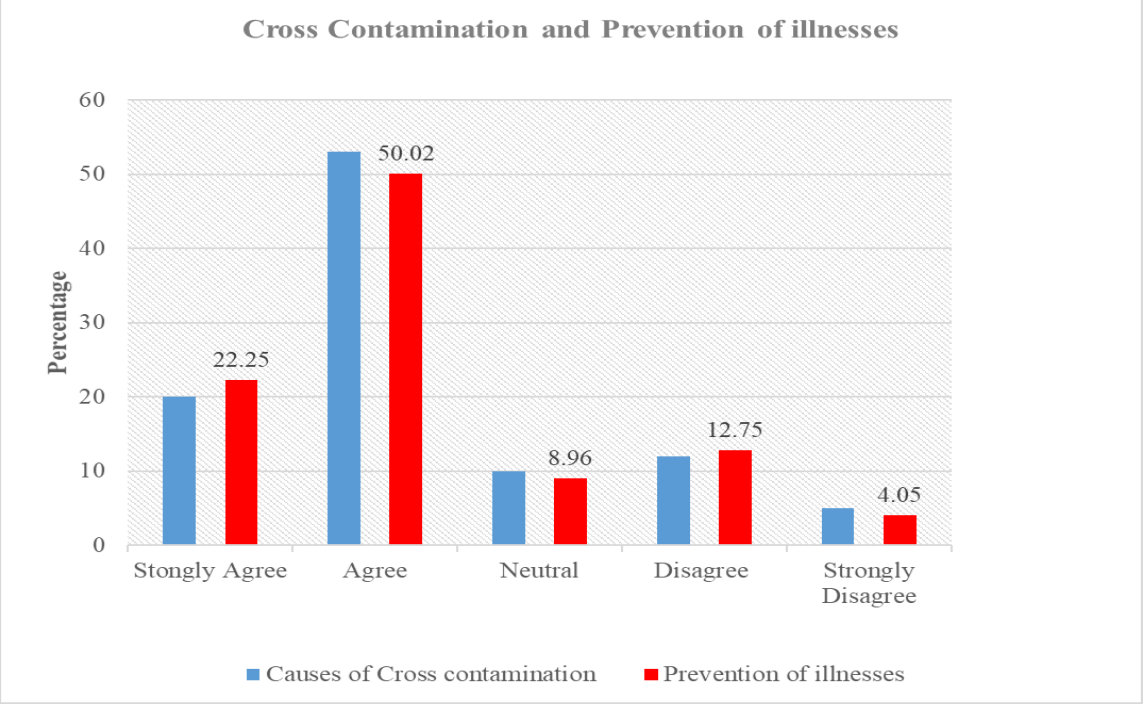

Figure 4.17 Causes of Cross Contaminations and Prevention of Illnesses

4.5 Sources of Food Hygiene Information

The study further determined the various sources of information for food handlers. The study first determined the possible sources of food safety and hygiene information. The findings were presented in the table 4.9 and figure 4.17 below**.**

Table 4.10 Sources of Food Hygiene Information.

Sources	Frequency	Percentage
Food hygiene information sheet		
Public Health Office Staff	135	47%
Staff Councils	103	36%
Supervisors	40	14 %
Media	9	3%
Total	**287**	**100%**

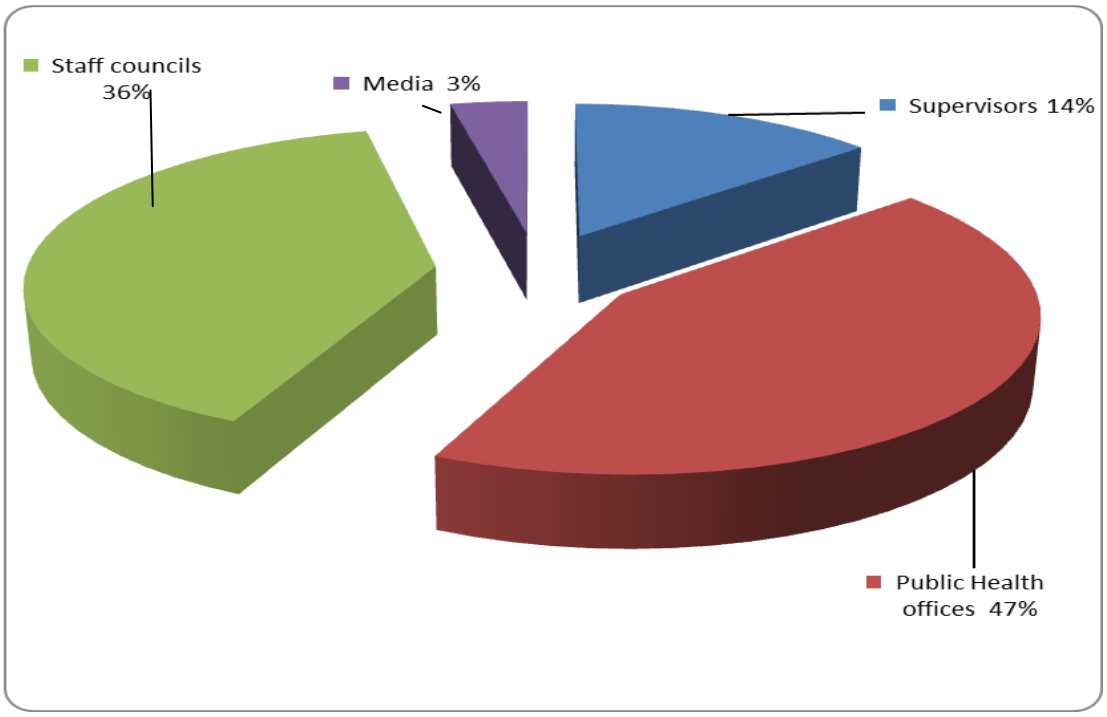

Figure 4.18: Sources of Food Hygiene Information

Majority of the participants (47%) get food safety and hygiene information from the public health office staff, (3%) from media, (14%) from supervisors while (36%) reported staff council. This shows that there is need for the restaurants' staff management to emphasize on staff training in order to acquaint the food handlers well with food safety and hygiene information. This implies that some supervisors had the knowledge on food hygiene practices but the knowledge was not shared adequately. As emphasized by Wang (2008), staff training is essential as it increases productivity, motivates and inspires the workers by providing them with all needed information in work as well as helped them to recognize how important their jobs are.

This contradict Kisembi (2010) findings on urban restaurants where (92%) of food handlers said they get food safety and hygiene information from the public health office staff and only (8%) reported to have obtained the information from staff council.

4.6 Training on Food Hygiene Requirements

The study further sought whether the food handlers had undertaken training on food and hygiene requirements apart from the catering and hospitality courses. The findings were presented in form of a table 4.10 below.

Table 4.11 Training on Food Hygiene Regulations

	Food Handlers Frequency	Percentage	Supervisors Frequency	Percentage
YES	167	58.20%	15	100%
NO	120	41.80%	0	0.0-%
TOTAL	287	100%		100%

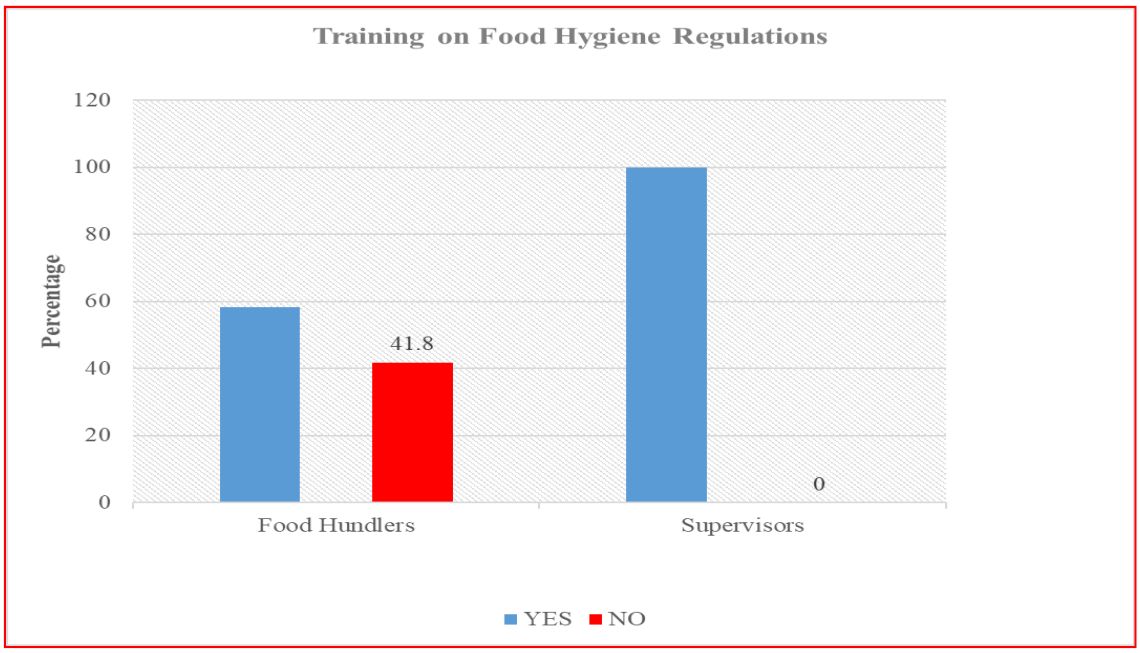

Figure 4.19 Training on Food Hygiene Regulations

The findings reveal that majority (58.20%) of the food handlers who work in these restaurants do not have basic formal training relevant to food and hygiene and therefore they have relative experience in the industry while 41.80% are trained in food and hygiene requirements. The low levels of training can contribute to the slow understanding and implementation of scientific and hygiene standards in the restaurants. If staffs are properly trained and experienced, they are flexible to change and will easily adapt to changes in food handling requirements. This is in line with Kisembi (2010) findings where 60% of restaurants staff were found lacking basic formal training relevant to food production aspects and while 40% were well trained in catering.

The study further determined the level of understanding of HACCP system among the food handlers. The findings were presented in the figure below.

4.7 Awareness of HACCP System among Food Handlers and Supervisors

The study set out to investigate the awareness of a HACCP system and principles among the staff of African indigenous restaurants. This was backed by the fact that a HACCP system must be developed by each sector, especially urban food establishments and tailored to their operations as a means of ensuring maximum food hygiene. The study evaluated the level of awareness of this food hygiene mechanism as presented in table 4.12 below.

Table 4.12: Awareness of HACCP System

Level of Awareness	Food Handlers	Percen-tage %	Supervisors	Percen-tage %
Very Low (Could neither Define nor state any principles)	30	10.30%	0	0.0
Low (Couldn't define and state a principles vaguely)	124	43.36%	0	0.0-%
Medium (Could Define and state some principles)	28	9.80%	1	13.3%
High (Could Define and state all principles)	60	21.00%	12	80%
Very High (Could Define and state all principles, explain its applicability to indig Restaurant)	45	15.54%	1	6.7%

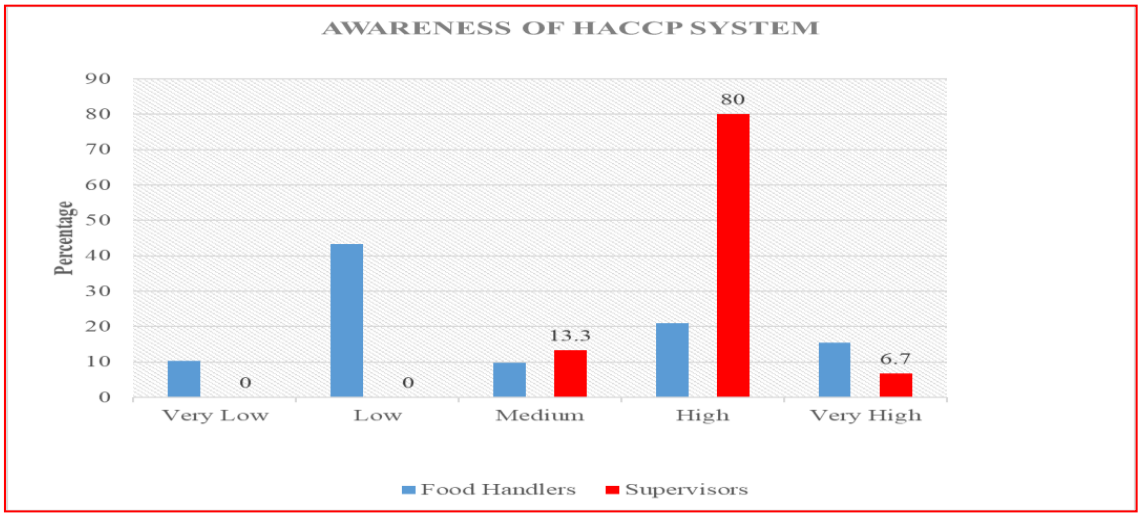

Figure 4.20: Awareness of HACCP System

From the average analysis, only (46.34%) of food handlers who filled the questionnaires who knew and could define HACCP as a quality control strategy while 53.66% had no

idea of what HACCP pertains. The food handlers who noted very high awareness could define HACCP and its principles fully as well as its applicability in African indigenous restaurants. Food handlers who scored Low and Very low had difficulty in defining HACCP and its principles as shown in the table 4.11 above. This is an indication that there is little awareness among food handlers hence there is need for the staff training on its application. Kisembi (2010) study confirm these findings, where staff interviewed (37%) knew of some quality control strategy but with no specification of any application while 63% had no understanding of any quality control methods in urban restaurants.

The findings revealed that awareness of HACCP system and its application among the food handlers was low (43.36%) in the African indigenous restaurants' in Nairobi City County, Kenya. (10.30%) had very low awareness on HACCP, (9.80%) had medium awareness, (21%) had high awareness, while (15.54%) had very high awareness on HACCP application. The low level of awareness was probably due to lack of enforcement from the relevant authorities as well as inadequate training. The supervisors had an average awareness of Very high (6.7%), high (80%) and moderate (13.3%), an indication that the level of awareness was high enough (86.7%)as they have been trained. The finding on awareness of HACCP system was consistent with the report by Minnesota Department of Health (2010) which observed that there is a significantly high knowledge and awareness of food hygiene practice (83%) among managers and supervisors as compared to other subordinates staff.

The findings indicated that training on HACCP system should be implemented and intensified as an effective food hygiene measure. As emphasized by Sprenger (2007), HACCP is an effective system because the food safety system was designed to provide the information flow

for preventive and corrective actions and can easily be established on the production lines of all kinds of foods. In addition, it establishes control procedures that reduce or eliminate hazards through verification and documentation (Tibebu, 2008).

4.8 Understanding Food Hygiene Measures among Supervisors

The study sought to determine the level of understanding of food safety and hygiene measures and its requirements. The findings are presented in the figure below

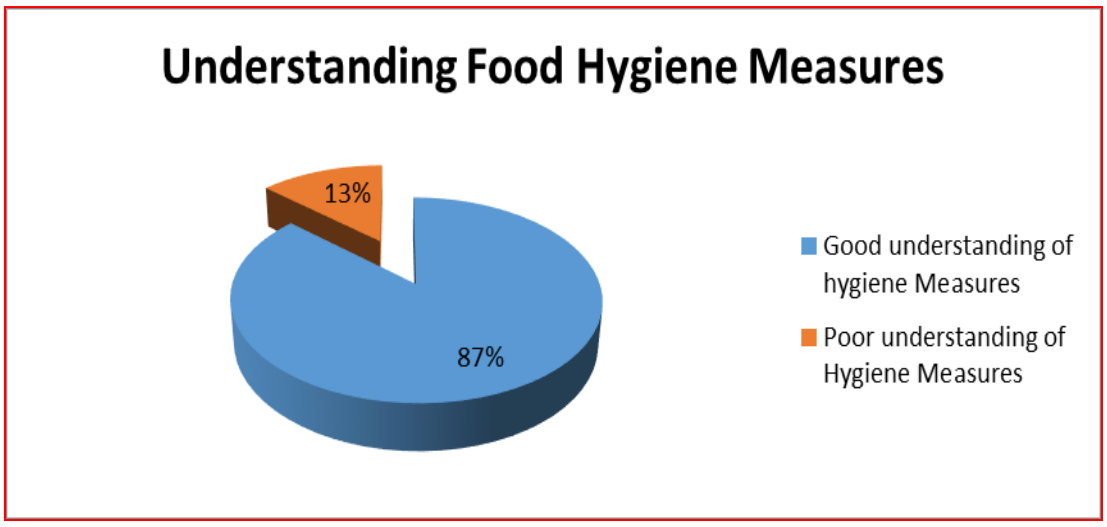

Figure 4.21: Understanding Food Hygiene Measures

According to the findings, the majority (86.70%) of the supervisors had good understanding of food safety and hygiene measures and its requirements. About (13.30%) of the supervisors had relatively poor understanding of food hygiene measures and its requirements. This shows that the supervisors were well aware of the food safety and hygiene measures and were therefore in a good position to ensure food hygiene measures in the restaurants. The finding were in line with Zain and Naing (2012), study that (83.3%) of supervisors and food handlers had high knowledge, awareness and

understanding of food hygiene regulation as well as unique food borne illnesses preventive measures.

4.9 Determinants of Customers' Choice of African Indigenous Restaurants.

The study sought to find out the elements influencing African indigenous restaurants customers' choice. Customers respondent were asked to rate the elements on a scale of 1 to 5 ranging as 1 = strongly disagree, 2 = disagree, 3= neutral, 4 = agree and 5= strongly agree. A Likert scale with five point was used to capture and interpret the responses from respondents.

According to the scale, those elements that were not considered totally were awarded number 1 while those that were extremely influencing choice were awarded number 5, number 4 for the fairly influencing choice, 3 for the neutral and 2 for somewhat influencing choice. The summary of the element tested was as shown in table 4.13 below.

Table 4.13: Determinants of Customers' Choice of African Indigenous Restaurants.

Element	N	Mean	Std
Restaurant and Open Kitchen cleanliness	238	4.02	0.812
Equipment and Dishes Cleanliness	238	4.01	0.728
Public Health Inspection Certificate	238	3.99	0.712
Presence of Flies/Rodents	238	3.98	0.721
Unauthentic ambience	238	3.89	0.827
Well groomed staff	238	3.77	0.722
Restrooms cleanliness	238	3.77	0.672
Temperature of the food served	238	3.77	0.672
Quality of ingredients in the food	238	3.72	0.777
Cooking time in open kitchen	238	3.72	0.621
Handling of equipment during Service	238	3.28	0.726
Belief that inspections should be more frequent	238	3.22	0.726
Behavior of employees/personal hygiene	238	2.87	0.879

The elements with a mean between 0.5 and 1.5 were not influencing customer choice of restaurant, while those elements with a mean greater than 1.6 but less than 2.5 were somewhat influencing customer choice of restaurant. From the respondents' summary in table 4.11 above, there was no score between 0.5 and 1.5 therefore all the elements mentioned above influenced customer choice of a restaurant to a fair extent. The elements with a mean greater than 2.6 but less than 3.5 were neutral and they include Handling of equipment during Service (M=3.28), Behavior of employees/personal hygiene

(M=2.87) and lastly Belief that inspections should be more frequent (M=3.22). The elements with a mean greater than 3.6 but less than 4.5 were fairly influencing choice of restaurant.

The elements that were found to be fairly influencing customers' choice of restaurants were, presence of flies/rodents (M=3.98), public health inspection certificate (3.99), equipment and dishes Cleanliness (M=4.01), unauthentic ambience (M=3.89), Well groomed staff (M=3.77), Restaurant and Open Kitchen cleanliness (M=4.02), restrooms cleanliness (M=3.77), quality of food ingredients (M=3.72), individualized attention (M=3.72), convenient operating hours (M=3.72), and lastly temperature of the food served (M=3.77).

The elements with a mean greater than 4.6 would be termed as extremely influencing customer choice of the restaurants. There was no mean score greater than 4.6 hence, it was be extrapolated that none of the factors listed above were perceived to be extremely influencing customer choice of restaurants. The standard deviation was also used to analyze the responses, where the higher the standard deviation, the higher the level of dispersion among the respondents. The standard deviation for all the elements listed was less than 1 meaning there was general consensus by the respondents. A standard deviation of more than one would mean there was no consensus among the respondents.

According to the above findings, the elements that mostly influenced choice of the restaurants were restaurant and open kitchen cleanliness, equipment and dishes cleanliness, public health inspection certificate, presence of flies and or rodents, unauthentic ambience, well groomed staff, restrooms cleanliness, temperature of the food served, quality of ingredients and cooking time in open kitchen. The findings further

revealed the elements that least influenced customers' choice of restaurants as handling of equipment during service, belief that inspections should be more frequent and behavior and personal hygiene of employees.

These results are similar to research performed by Lee et al., (2012) where storage temperature, cooking and quality of food materials, Kitchen and restaurant cleanliness had the biggest influence on food safety and customer choice. Statements with the lowest ranking were two non-kitchen related statements -serving of food by waiters and belief that inspections should be more frequent.

The study further sought clarification on the hygiene aspects the customer most considered while selecting an indigenous restaurant to dine in. Typical comments written on questionnaire were as follows;

"When I go places am familiar with…I usually go to the back and look at the floor (of kitchen). I also look at the Bathrooms" (Customer 1- African indigenous restaurants)

"Bathrooms, tables, and if I have access to see the kitchen, I'll always look into the kitchen." (Customer 2- African indigenous restaurants)

Some customers stated that they use restaurant inspection certificate to determine whether it is safe to eat at the restaurant. Typical comment were;

"If it is not there, I leave. I always check any clue on whether the place has been inspected on not." (Customer 3- African indigenous restaurants)

Several customers stated as follows;

"Hot food… particularly when it is buffet…you will know if they are careful…." (Customer 4- African indigenous restaurants)

The results are similar to Lee, et al. (2012) study finding on customer perception of ethnic Asians and Mexican restaurants where respondents stated major determinants of restaurant choice as kitchen, restrooms and restaurant cleanliness, staff grooming and quality of food ingredients.

4.10 Hypothesis: Food Handlers' Hygiene Practices and Customers' Choice of African Indigenous Restaurants

The study determined the relationship between food handlers' hygiene practices and customers' choice of African indigenous restaurants. The study tested the following hypotheses stated in null and alternative forms;

i**). H0:** There is no significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi County, Kenya.

ii). H1: There is a significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi County, Kenya.

To test these hypotheses, the hygiene compliance scores of the hotels were analyzed against the average number of customers in the restaurants using the Chi-square analysis. In this research study, chi-square test was done to establish whether there was a significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi County, Kenya. A p-value (level of significance) of less than (0.05) was considered as significant. The chi-square analysis of the results was stated in table 4.14 below;

Table 4.14: Chi Square

The Chi-Square Tests	The Valu	d.f	Asymp.Sig. (2-sided tail)
Pearson Chi-Square	4.244	1	0.133
Likelihood Ratio	4.634	1	0.104
Association	3.760	1	0.039
N of Valid Cases	**238**		

The findings presented a χ 2 = 4.244, df* = 2 and p = 0.133 which is > 0.05. With a significance level > 0.05 (0.133), the alternative hypothesis (H1) was rejected. The results showed that there was no significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi County, Kenya. The implication of this χ 2 test result is that customers' choice of African indigenous restaurants cannot be attributed to the food handlers' hygiene practices in Nairobi County. `Even though customers look at hygiene elements, there are other pull factors to these restaurants. As such, they customers have different characteristics; hence, they tend to use different criteria in selecting restaurants (Chung & Kim, 2011).

A deeper understanding of consumers' selection criteria would provide restaurateurs with valuable information and insights which would enable them to attract and retain more consumers (Jang & Namkung, 2007). Thus, the central question for restaurant managers is: what are the major attributes that influence their restaurant choice? The type of restaurant selected by the customers is major factor as recognized by Hensley and Sulek (2004). Kim and Moon (2009) noted that customers hold different expectations and perceptions of their different dining experiences in a different restaurant type and may have different selection criteria. In the available current literature, menu price is one of

the major factors determining consumer decision-making and subsequent behaviours (Chung & Kim, 2011; Kafel & Sikora 2013; Massawe, 2013).

4.11 Summary of Hypothesis Testing

Table 4.15: Summary of Hypothesis Testing

Hypothesis	**Level of significance**	**Acceptance/rejection of the hypothesis**
H0: There is no significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi City County, Kenya.	Pearson Chi-Square coefficient = 4.244 P-value =0. 133 p-value >0.05	Null hypothesis (H0) accepted
H1: There is a significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi City County, Kenya.	Pearson Chi-Square coefficient= 4.244 P-value =0. 133 p-value >0.05	Alternative hypothesis (H1) Rejected

The findings presented a p-value of (0.133) which was greater than 0.05 as shown in table 4.15 above. The null hypothesis was accepted indicating that there was no significant relationship between food handlers' hygienic practices and customers' choice of African indigenous restaurants in Nairobi County. The choice of the restaurants was mostly because of other factors such as health, variety and curiosity.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The researcher sought to determine the food handlers' hygiene practices as determinants of customers' choice of African indigenous restaurants in Nairobi County, Kenya. From the analysis of the data collected, the following discussions, conclusion and recommendations were made. These sections were based on the objectives of the study.

5.1 Summary

This section presents the summery of the findings in line with the objectives of the study.

5.1.1 Food Hygiene Practices among Food Handlers

The study found out that in general, the African indigenous restaurants' in Nairobi City County, Kenya maintained high hygiene standards. Majority of the restaurants had clean compounds (86.7%) with both solid (86.7%) and liquid wastes (80%) well collected. All the restaurants prohibited smoking (100%) in both kitchen and dining rooms and provided a smoking zone (93%). The African indigenous restaurants had health and safety licenses (100%) as required by the Public Health Act (GoK, 2005). They had hand wash basins as recommended, had adequate lighting and ventilation (100%), had well-groomed staff ((90%) and had relatively clean crockery and utensils (60%) while in(40%) they were dirty. All the selected African indigenous Restaurants had dry storage space (100%) and (98%) had cold storage facility such as deep freezers and refrigerators. About 88% of the establishments observed food holding precaution and a small proportion (12%) failed were found not to observe.

5.1.2 Level of Awareness Regarding Food Hygiene Requirements

The purpose of this research objective was to ascertain if the food handlers and the supervisors are cognizant of the food hygiene requirements guiding their operations. The study first determined the possible sources of food safety and hygiene information. The findings revealed that majority of the participants (47%) get food safety and hygiene information from the public health office staff and staff councils (36%) while a small proportion of them reported media (3%) and supervisors (14%) as their source of food safety and hygiene information. The findings revealed that there is need for the restaurants' staff councils to emphasize on staff training in order to acquaint the food handlers and the supervisors well with food safety and hygiene information.

With regard to training, the findings revealed that the majority (58.2%) of the food handlers who work in indigenous restaurants lacked basic formal training relevant to food hygiene and therefore they have relative experience in the industry while a smaller proportion (41.2%) were trained in food hygiene requirements. The low levels of training can contribute to the slow understanding, implementation of scientific, and hygiene standards in the restaurants.

The study further determined the level of awareness of HACCP system among the food handlers. The findings revealed that awareness and knowledge of HACCP application among the food handlers was low (53.66%). The low levels of awareness were probably due to lack of staff training and enforcement from the relevant authorities

Among the supervisors, the study revealed that the majority (86.7%) of the supervisors had high level of understanding of food safety and hygiene measures and its requirements. Only a small proportion (13.3%) of the supervisors had low understanding

of food safety and hygiene measures and its requirements. With regard to food safety and hygiene training offered to the staff by the restaurants, the study findings indicated that only a small proportion of the restaurants offer training pertaining to food safety and hygienic measures. A large proportion of the restaurants do not offer such training. When asked the importance of such training, all the supervisors (100%) agreed that training on food safety and hygiene measures would help the staff especially the food handlers to adhere well with the food safety and hygiene measures.

5.1.3 Customers Choice of African Indigenous Restaurants

This objective sought to determine those elements that influenced customer choice of an African indigenous restaurant. The findings revealed that elements such as handling of equipment during Service, behavior of employees/personal hygiene and Belief that inspections should be more frequent were neutral. The presence of flies/rodents, availability of public health inspection certificate, equipment and dishes Cleanliness, unauthentic ambience, staff grooming , Restaurant, Restrooms and Open Kitchen cleanliness, quality of food ingredients, individualized attention, convenient operating hours and temperature of the food served were fairly influencing customers' choice of an Indigenous restaurants. There were no elements found to be extremely influencing customers' choice of restaurants.

5.1.4 Relationship Between Food Handlers' Hygiene Practices and Customers' Choice of Restaurants

This objective determined the relationship between food handlers' hygiene practices and choice of restaurants. The findings presented a χ 2 = 4.244, df = 2 and p = 0.133 which is

> 0.05. With a significance level > 0.05 (0.133), a conclusion was made that there is no significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi County, Kenya. The implication of this χ 2 test result is that customers' choice of African indigenous restaurants cannot be attributed to the food handlers' hygiene practices. Customers come to these restaurants due to some other factors not included in this study.

5.1.5 Summary of Demographics

The study found out that (58%) and (42%) of the food handlers were male and female respective fully with 70% aged between 20-30 years, 12% between 18-20 years, 10% of them 31-45 years and 8% were above 45 years. The findings showed that most of the food handlers in general were young and 74% had attained college, 15% secondary 5 % university, 4% primary and 2% had post- graduate education. This was an indication that most restaurants' food handlers have attained college level education and above. About 67.9% of the food handlers had worked in the restaurants for over 3 years and (7.5%) for more than 10 years. The findings revealed that most of the food handlers (72.6%) had worked elsewhere and (27.4%) had not before joining the restaurants, as they were fresh graduates. Food handlers (63.8%) had worked for more than one year before joining the restaurants, 25.5% had worked for one year while 10.7 % had worked for less than one year. The findings reveal that food handlers had experience in food handling practices and the restaurants retain most of their staff.

According to the findings, majority (60%) of the supervisors were male and 40% were Female This shows that most restaurants prefer male supervisors to female due to

flexibility in their schedules. Supervisors (69%) were aged between 31- 45 while (14.60%) were over 45 years. About (80%) had college and degree level education while 20% had attained post-graduate education. Most supervisors (60%) had worked in the same restaurants for 3-7 years indicating that they had great experience in the operations. The findings further revealed that majority (86.7%) of the supervisors had worked elsewhere while (13.3%) had not. About (60%) of the supervisors had worked for more than one year before joining the restaurants, (26.7%) had worked for one year while (13.3%) had worked for less than a year.

According to the findings, 18 – 25 age bracket constituted 7%, 26 – 35 age bracket constituted 22%, 36 – 45 age bracket constituted 31%, 46 – 55 age bracket constituted 34% and lastly age over 55 years had 6% of the sampled customers. These findings revealed that most of the young people and the elderly do not prefer dinning in the African indigenous restaurants. About 38% of the customers were male and 62% were female. From the findings, (78%) of the customers were Kenyan. (12%) were from other parts of Africa, (4%) were Asians, (3%) came from Europe, (2%) were from USA while 1 % came from other parts of the world. The findings revealed that most foreigners do not prefer dinning in African indigenous restaurants. This implies that the vast majority of indigenous restaurants customers are local and familiar with the environment, an indication that the response given was factual and from real experiences. **T**he findings found out that (53%) of the participants had visited the restaurants for more than 10 times. (23%) 6-10 times, 14% for 2-5 times while (10%) had visited the restaurants for the first time. The findings revealed that majority of the participants were regular customers in these restaurants.

5.2 Conclusions

The general hygiene standards of the African indigenous restaurants' in Nairobi City County, Kenya, was acceptable as indicated by clean compounds (86.7%), adequate waste disposal; solid (86.7%) and liquid wastes (80%) and prohibition of smoking within the establishments (100%). The establishments provided a separate smoking zone (93%) as well as acquired the health and safety licenses (100%) as required by the Public Health Act (GoK, 2005). The hand wash basins, adequate lighting and ventilation (100%), well-groomed staff ((90%) and clean crockery and utensils (60%) were observed. All the selected African indigenous Restaurants had dry storage space (100%) and (98%) had cold storage facility such as deep freezers and refrigerators and, 88% of the establishments observed food holding precaution. Although a few establishments had dirty compounds and equipment at the time of visit, the average hygiene standards as acceptable.

The possible sources of food hygiene information for the food handlers was public health office staff (47%), staff councils (36%), media (3%) and supervisors (14%). This revealed that there was need for staff training in order to acquaint them well with food hygiene information. This was informed by (58.2%) of the food handlers who were found as lacking basic formal training relevant to food hygiene requirements and experience. The lack of staff training and enforcement contributed to the levels of awareness and knowledge of HACCP system application among the food handlers. The study found out that only a small proportion of the restaurants offer training pertaining to food safety and hygienic measures. Although all the supervisors (100%) agreed that training on food hygiene measures is important, there appear to be challenges in implementing these

systems and efforts need to be put to overcome them. A key area of focus would be on motivating food handlers to follow the standard operating specifications and procedures related to food hygiene.

The findings revealed that certain elements determine customers' choice of African indigenous restaurants. The presence of flies and rodents, availability of public health inspection certificate, general cleanliness of equipment, restaurant, restrooms and kitchen cleanliness, unauthentic ambience, staff grooming and quality of food ingredients were major determinants of customer choice. There were no elements found to be extremely influencing customers' choice of restaurants. The study also concludes that most customers are not keen on hygiene standards because this was quite evident in some restaurants where regardless of the poor hygiene practices present, there were still high flows of customers. The study therefore concluded that even though hygiene practices have an effect on the customers' choice of the restaurants, the effect is not significant.

The study set out to establish relationship between food handlers' hygiene practices and customers; choice. The conclusion was that there is no significant relationship between the food handlers' hygiene practices and customers' choice of African indigenous restaurants in Nairobi County, Kenya. There were high customer turnover especially in some indigenous restaurants where poor hygiene practices such as dirty compounds and crockery observed. This meant that although hygiene is a major determinant in selecting where to dine, customers are not keen on it,

5.3 Recommendations

Based on the study findings, the following recommendations were made.

5.3.1 Recommendations for Policy

The public health authorities and county government in the urban centers ought to inform all food handlers, restaurant owners and managers, and other stakeholders on food hygiene guidelines. The relevant authority should enforce the laws and inform consumers through posters, the media and publicity campaigns about hazards associated with improper handling of food and the steps the authority require restaurants to take to minimize those hazards. Consumers should be educated about their responsibility in ensuring that they do not contaminate, dirtily or litter street food vending sites.

Proper food safety and hygiene training will ensure correct passage of information to the employees (staff/Food handlers) and customers and thereby increase participation in implementation of food safety systems. The public health authorities in urban restaurants should extend their periodical spot checks and random sampling together with the sensitization on food safety standards to the Staff and managers of the food establishments. They should also do thorough checks on how food materials are received stored, issued, prepared and served to the customers.

5.3.2 Recommendations for the Management

To ensure food safety, the restaurants' management should ensure that the restaurants comply with the relevant authorities and laws such as the public health office and Public Health Act. The restaurants' management is required to make sure that the food handlers are clean and free from illnesses, and that those who are ill do not handle food in any capacity before they seek medication. The management should ensure that the food handlers in these restaurants have been immunized against all food and water-borne

disease such as typhoid, hepatitis A or any other diseases as required by the relevant authority. The management should ensure proper sanitation through sufficient supply of water at all times, and efficient waste disposal system which should be maintained in a good state of repair.

5.3.3 Recommendations for Further Research

In line with the findings, the study recommended the following areas for further research.

1. The study was confined to the African indigenous restaurants operating in Nairobi City County alone. A similar study should be replicated to other localities not covered by this study since food safety is a general concern in every locality.

2. This study was on urban African indigenous restaurants only. Another study needs to be carried out on specialty restaurants serving other cuisines such as Indian, Japanese or Korean to see whether the findings tally.

3. The current study sampled only 15 African indigenous restaurants in Nairobi City County. A study incorporating more restaurants was suggested to the findings more general and to settle on more profound conclusions.

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Appendix I: Letter Requesting Permission to Conduct Research

KENYATTA UNIVERSITY
SCHOOL OF HOSPITALITY AND TOURISM
PAUL NDERITU MWANGI
P.O.BOX 2768-200,
NAIROBI, KENYA.
2ND AUGUST, 2016.
+ 254 716 491 721
paulmwanginderitu@yahoo.com

THE RESTAURANT MANAGER
PRIVATE BAG
NAIROBI, KENYA.

Dear Sir/Madam,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I am a registered Master's student in the School of Hospitality and Tourism at Kenyatta University. As part of the requirements for the award of the degree, I am required to undertake a research. My topic of study is as follows: **Food Handlers' Hygiene Practices as Determinants of Customers' Choice of Selected African Indigenous Restaurants' in Nairobi City County, Kenya.** I am hereby seeking your consent to proceed and collect data using attached questionnaires, one for food handlers and the other for the customers, an interview guide and an observation checklist.

I have further attached research permit and authorization letter from National Commission for Science, Technology and Innovation to assist you in reaching a decision**.** For any further information, please do not hesitate to contact me. Your permission to conduct this study will be greatly appreciated.

Yours sincerely,

Paul Nderitu Mwangi

Appendix II: Questionnaire for Customer Participants

This part is on general information about you as respondent. Please provide answers to the following questions by ticking (√) against the most suitable alternative or giving narrative responses in the spaces provided. Your response shall be accorded all the confidentiality it deserves and will only be used for academic purposes.

Section A: Demographic Information

1. Code of the restaurant……

2. Gender: Male [ ] Female [ ]

3. Age: 18-25 [ ] 26-35 [ ] 36 – 45 [ ]

46 – 55 [ ] Above 55 [ ]

4. Nationality:

Kenya [ ] Rest of Africa [ ] Europe [ ]
USA [ ] Middle East [ ] Asia [ ]

Other (Specify)……

5. Number of visits to this hotel:

First visit [ ] 2 to 5 visits [ ] 6 to 10 visits [ ]
More than 10 visits [ ]

Section B: Elements that Influence Customers Choice of Restaurants

6. This part concerns the elements that influence your choice for restaurants. Please show the extent to which you think each factor influences your choice for restaurant. Do this by putting a tick (√) in the appropriate box. A "1" means you strongly disagree while a "5" means that you strongly agree. You may tick any of the number in the middle that shows how strong your feelings are. There are no rights or wrong answers.

Element	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Restaurant and Open Kitchen cleanliness					
Equipment and Dishes Cleanliness					
Public Health Inspection Certificate					
Presence of Flies/Rodents					
Unauthentic ambience					
Well groomed staff					
Restrooms cleanliness					
Temperature of the food served					
Quality of ingredients in the food					
Cooking time in open kitchen					
Handling of equipment during Service					
Belief that inspections should be more frequent					
Behavior of employees/personal hygiene					

7. When dinning out, what criterion do you apply in choosing a restaurant?

……
……
……

Appendix III: Questionnaire for Food Handlers

Please provide answers to the following questions by ticking (√) against the most suitable alternative or giving narrative responses in the spaces provided. Your response shall be accorded all the confidentiality it deserves and will only be used for academic purposes.

Section A: Demographics

1. Gender

a). Females [ ] b). Males [ ]

2. Age

a). Below 20 years [ ] b). 20- 30 years [ ]
c). 31-45 Years [ ] d). Above 45 years [ ]

3. Education level

a). Primary [ ] b). Secondary [ ] c). College [ ]
d). University [ ] e). Post graduate [ ]

4. Duration worked in the restaurant

a). Below 1 year [ ] b). 1-2 years [ ] c). 3- 7 years [ ]

d). 7-10 years [ ] e). Over 10 years [ ]

5. Have you worked elsewhere before joining the restaurant?

Yes [ ] No [ ]

If yes, please indicate the duration you have worked before joining the restaurant

Less than a year [ ] One year [ ] More than one year [ ]

Section B: Level of Awareness Regarding Food Hygiene Requirements.

The purpose of this section is to gather data to ascertain if the food handlers are cognizant of the food hygiene requirements guiding their operations.

6. What is your main source of information pertaining to food safety and hygiene practices?

a). Public health offices [ ] b). Staff councils [ ]

c). Supervisors [ ] d). Media [ ]

7. Food hygiene information sheet posted within the establishment?

Yes [ ] No [ ]

8. Have you undertaken training on food and hygiene requirements?

Yes [ ] No [ ]

9. Rate the level of importance of Food Hygiene Training.

a). Very Important [ ] b). Important [ ]

c). Don't Know [ ] d). Not Important [ ]

10. What is your understanding of the term HACCP system in Food Hygiene?

……

11. How can you rate your understanding of HACCP system**?**

a) Very High [ ] b). High [ ] c). Medium [ ]

d). Low [ ] e)/ Low [ ]

Section C: Food Handlers Hygiene Practices

12. In what quantities do you get food supplies for your restaurant?

a). Small quantities (Below 50kgs) [ ] b). Medium (50-100kgs) [ ]

c). Bulk (Over 100kgs) [ ]

13. What happens after you receive food supplies for your restaurant?

……

14. How do you preserve food supplies?

a). Refrigeration [ ] b). Freezing [ ] c). Dry storage [ ]

15. How do you hold prepared and cooked food before service?

a). Hold in high temperatures [ ] b). Hold in cold temperatures [ ]

c). No preservation measures taken [ ]

16. How do you handle left over food in the restaurant?

.....

17. Poor hygiene Causes cross contamination

a). Strongly agree [ ] b) Agree [ ] c). Neutral [ ]

d). Disagree [ ] e). Strongly disagree [ ]

18. Good hygiene practices prevent diarrhea

a). Strongly agree [ ] b) Agree [ ] c). Neutral [ ]

d). Disagree [ ] e). Strongly disagree [ ]

Appendix IV: Interview Guide for the Supervisors

Section A: Basic Demographic Information

1. Gender

a). Males [ ] b). Females [ ]

2. Age

b). 18-30 years [ ] b). 31- 45 [ ] c). over 45 years [ ]

3.Education level

a). College and above [ ] b). Below college [ ]

4. Duration worked in the restaurant

a). Below 1 year b). 1-2 years [ ] c). 3- 7 years [ ]

d). 7-10 years [ ] e). Over 10 years [ ]

5. Have you worked elsewhere before you joined the restaurant

a). Yes [ ] b). No [ ]

If yes, for how long have you worked before joining the restaurant

a). Less than a year [ ] b). One year [ ] c). More than one year [ ]

SECTION B: Work Place and Activities

6. Understanding food hygiene and its requirements in indigenous restaurants.

a). Good [ ] b). Poor [ ]

7. Food safety and hygiene measures/compliance in place in the establishment.

8. Food safety and hygiene training offered to the staff.

9. Importance of these training to the establishment.

THANK YOU FOR YOUR TIME

Appendix V: Observation Checklist

1. Compound

   a) Clean [ ] b). Fairly Clean [ ] c). Dirty [ ]

2. Liiquid Waste

   a). Well collected [ ] b). Not Well collected [ ]

3. Solid Waste

   a). Well collected [ ] b). Not Well collected [ ]

4. Smoking in Kitchen

   a). Allowed/Silent [ ] b). Prohibited [ ]

5. Smoking in Restaurant

   a). Allowed/Silent [ ] b). Prohibited [ ]

6. Staff Grooming

   a). Proper Grooming [ ] b). Poor Grooming [ ]

7. Crockery and Utensils

   a)Clean [ ] b). Fairly Clean [ ] c). Dirty [ ]

8. Health and Safety License (2015)

   a). Issued [ ] b). Not Issued [ ]

Appendix VI: List of African Indigenous Restaurants

S/N	Name of Restaurant	Location	Cuisine
1	Abondoz Restaurant Ltd	CBD (Muindi Mbungu Str)	African
2	Aces Afrikana Bistro	Westlands	African
3	African Delight Restaurant	South B Shopping Center	African
4	African Fiesta	Westlands (Sound Plaza)	African
5	African Taste Restaurant	CBD (Portal Place)	African
6	Akuche Migingo	CBD (Winnie Plaza)	African
7	Amaica Restaurant	Westlands	African/Kenyan
8	Amaica Restaurant	Kilimani	African, Kenyan
9	Amboseli Gardens	Lavington (Serenity Rd)	African/Continental
10	Ankara Food Court	CBD (Travel House)	African, Continental
11	Apple Munch Restaurant	CBD (County House)	African
12	Bejos Restaurant	CBD (Emperor Plaza)	African
13	Bombay Restaurant	Langata (T Mall)	African/Indian
14	Bonds Garden Restaurant	UpperHill (Menengai Rd)	African/Continental
15	Bonkas Foods	UpperHill	African
16	Bridges Organic	CBD (Trust Mansion)	African, International
17	Bridges Organic	UpperHill (Menengai Rd)	African /International
18	Cafe Deli & Delicatessen	CBD (Tumaini Hse)	African/Continental
19	Can-Afrika Café	Lang'ata	African International
20	Carnivore Restaurant	Lang'ata	African/Kenyan
21	Castle Caterers KK	CBD (Standard Street)	African
22	CBF - Beneve Coffee House	CBD (Standard Street)	African, Kenyan
23	Checkers Deli Restaurant	CBD (888 Center,)	African
24	Chez Papa Guinness	CBD	African
25	Circles Coffee Lounge & Bar	CBD (Kenol-Kobil) Koinange St.	African
26	CitiZone Caterers	Buruburu (Buruburu Police)	African/Continental
27	City Star	CBD (Kimathi Street)	African
28	Click Restaurant	CBD(Agha Khan Walk)	African
29	Club 100 Coffee Bar & Lg	Westlands (Woodvale Grove)	African, International
30	Coconut Flava	CBD (Agrho House)	African
31	Coconut Flava Food Court	CBD (Agrho House) Moi Ave	African
32	Cool Waters Restaurant	Ngong Road (Dagoretti)	African/International

33	Dari Rest & Coffee Gardens	Karen	African Fusion
34	Eateries Restaurant	CBD (Kenya Cinema) Moi Ave	African/Continental
35	Edens Pot Restaurant	UpperHill	African/International
36	Faraja Fariji Catering Kenya	CBD (Moi Avenue)	African/ Somali
37	Fiesta	CBD (Chester House)	African
38	Four Corners Café	Ngong Rd	African/Continental
39	Frankie's Sports Bar &Lg	Ngong Road (The G l	African/Continental
40	G&R Restaurant	CBD (Biashara Street)	African
41	Garlix Rest & O. Caterers	CBD (Monrovia Street)	African
42	Gawa Dishes	CBD (Moi Avenue)	African
43	Golden Grills	CBD (State House Avenue)	African/Continental
44	Greenview Restaurant	CBD (Tubman Road)	African
45	Healthy Foods Restaurant	CBD (Kenwood House) Kthi St	African/International
46	Heritage Grill	CBD (Agric Hse) Moi Avenue	Kenyan/African
47	Highlands Café & Rest	CBD (Annex bld) T. Mboya St	African/Continental
48	Highlands Cafe & Rest	CBD (Corner House) Kimathi St	African/Continental
49	Highlands Premier Café	CBD (Common Wealth Hse)	African/Continental
50	Hoggers Restaurant	CBD (Laptrust Annex)	Africa
51	Hongs Bakery & Rest	Hurlingham (Yaya Centre)	African/Chinese Cafe
52	Hot Dishes Restaurant	CBD (Kaunda Street)	African
53	Hotel Kipepeo	CBD (River Road)	African/International
54	Hotel Mariposa Bar & Rest	CBD (Neno Plaza)	African/International
55	Humming Bird	Kileleshwa (Kandara Road)	African/Continental
56	Impala Hotel	Parklands (Parklands Road)	African/International
57	Inka Café	CBD (Agrho House)	African
58	Insygnia Lounge	South B (Mkoma Rd)	African
59	Jambo Grill	Thika Road	African
60	Jamret Restaurants	Ngong Rd (Adams Arcade)	African/Continental
61	Jans Kitchen	Ngong Rd (Jamhuri Estate)	African/Continental
62	Katanazi Restaurant	Kilimani (Kirichwa Rd)	African/Continental
63	Kendu Bay Foods	CBD (Mariam Hse)	African/Continental
64	Kengeria Restaurant	Thika Road (Opp. GBS Station)	African/West African
65	Keynan's & Kimmi's	Kileleshwa (Suguta Road)	African
66	Kikopey Nyama Choma	Karen-Kikuyu	African
67	Kivi Milimani Restaurant	Milimani Road	African/Continental

68	KK Restaurant	CBD (Standard Street)	African
69	Kula Korner	Hurlingham (Woodlands Rd)	African/Continental
70	KulaPlus	CBD (Moi Avenue)	African/Continental
71	KulaPlus	Westlands	African/Continental
72	Lazarus Inn Lounge & Grill	CBD (Moi Avenue)	African/Continental
73	Le Palanka	Lavington	African Fusion
74	Lowis Restaurant	CBD (Tubman Rd)	African
75	Mama Oliech Restaurant	Hurlingham (Marcus G.y Rd)	Africa/Kenyan
76	Mamba Village	Karen	African, Continental
77	Marble Arch Hotel	CBD (Lagos Road)	African/Continental
78	Mesob Red Sea Restaurant	Ngong (China Centre)	African
79	Morning Catch	Lavington (Kandara Rd)	African
80	Mvuli House Restaurant	Nairobi West	African
81	Natures African Cuisine	Thika Road Mall	African
82	New Maisha Restaurant	Ngong Road	African
83	Nyama Choma Ranch	Thika Road, Safari Park Hotel	African Barbeque
84	Oceanic Restaurant	CBD (Clarion Hotel)	African/Continental
85	Ol'Kiserian Meat House	CBD (Agro House)	African/Kenyan/Steak
86	Oloibon Bar	Maasai Lodge (Magadi Rd)	African
87	Orchid Lounge	Westlands (Nakumatt Ukay)	African/Chin/Contintal
88	Osoita Lodge Bar & Rest.	Ongata Rongai	African/Continental
89	Pados Restaurant	CBD (County House)	African/Continental
90	Papaya Restaurant	CBD (Uganda House)	African
91	Papaya Restaurant LTD	CBD(Shell P.Station-Lat Rd.	African
92	Paramount Café	CBD (Gaturi Hse) Tubman Rd	African
93	Paris Hotel Restaurant	CBD (Mfangano Street)	African/International
94	Peecees Take Out	Westlands (Mpaka Rd)	African/Continental
95	Pekeshe Coffee House	CBD (Agha Khan Walk)	African/Continental
96	Pekeshe Coffee Masters	CBD (Jubilee Hse-Mama Ng. St	African
97	Petma Restaurant	CBD (Kenwood House) Kthi St	African
98	Petma Restaurant	CBD (Rattansi Hse) K. St	African
99	Petma Restaurant	CBD (Travel House) Kaunda St	African
100	Piccolina Lounge and Club	South B (Vumira House)	African
101	Polo Restaurant LTD	CBD (Dev. House) T.Mboya St	African
102	Pots and Palms	Riverside (Riverside Drive)	African

103	Pots Delight	Westland (Bandari Plaza)	African/Continental
104	R & J Bistro	CBD (Uganda House)	African/Continental
105	Raha Fresh	Thika Road Mall	African
106	Rayan Hotel & Restaurant	CBD	African/Mediteranean
107	Red Chilli Restaurant	Muthaiga Nairobi	African/Continental
108	Rendezvous Restaurant	Ngong Rd (Prestige Plaza)	African/Italian
109	Rising Star Cafe & Rest	Kilimani (George Padmore Rd)	African
110	Rising Star Cafe & Rest	Hurlingham (Laiboni Center)	African
111	Royal Flavours Grill	South B (Odyssey Plaza)	African/Continental
112	Sahara Garden Restaurant	Parklands (Masari Rd)	African/Indian
113	Samba Brasilia Rest. & Bar	CBD(Moi Avenue)Tumaini Hse	African
114	Seasons Restaurant	CBD (Uchumi Hse)	African/Kenyan Bar
115	Seven Degrees Bar & Rest	Ngong Road	African
116	Shade Hotel	Karen (Ngong Rd)	African/International
117	Simba Saloon	Lang'ata	African Barbeque
118	SinBin Sports Bar & Lounge	South B (Mkoma Road)	African
119	Sippers Bar & Restaurant	Hurlingham (Woodlands Lane)	African/Continental
120	Sizzling Hotel Rest & Pub	CBD (Moi Avenue)	African/Kenyan Bar
121	Songea Restaurant	CBD (Nakumatt Lifestyle)	African/International
122	Spoilers Lounge	Karen (Darosa Plaza)	African/Continental
123	Steak 'N' Ale Rovers Rest	CBD (NHC House)	African
124	Swahili Plate	CBD (Muindi Mbingu Street)	African/Swahili
125	Swahili Plate	Ngong Rd (Prestige Plaza)	African
126	Swahili Plate	Westlands (Sarit Centre)	African
127	Taidys Restaurant	Nairobi West	African Continental
128	Talisman	Karen-Ngong' Road	African/Asian /Europe
129	Tamasha Nairobi West	Nairobi West	African
130	Tamu Tamu Dishes	Westland (Woodvale Groove)	African
131	Taste Of Africa	Gigiri (Village Market)	African
132	Teazers Westwise Lounge	Ngong Rd (Mucai Drive)	African/Italian
133	The Court Yard Garden	Milimani	African / International
134	The Gourmet Nomads	Riverside Drive	African
135	The Urban Spoon Rest	Hurlingham	African/Continental
136	Thermo Restaurant	Upper Hill (Kenya-Re Towers)	African Continental
137	Tipuana Gardens	Karen	African Fusion

138	Tsavo Dishes	CBD (Latema Street)	African Continental
139	Tulips Restaurant	Kileleshwa (Mandera Rd)	African/Conti/Indian
140	Uptown Foods LTD	CBD(Utalii House)	African/Somali
141	Utamaduni Restaurant	Langata (Bomas of Kenya)	African
142	Vimac Restaurant	CBD (Loita House) Loita St	African
143	Visa Place	Upper Hill (Mara Road)	African/Continental
144	Wasanii Restaurant	CBD (Kenya National Theatre)	African
145	Watamu Restaurant	Muthaiga (Kingdom Gardens)	African/Continental
146	Watene Place Restaurant	CBD (Monrovia Street)	African
147	West Breeze Hotel	UpperHill (Masaba Road)	African
148	Wonderland Restaurant	UpperHill (Lunar Park)	African/Continental
149	Zapata Restaurant	Westlands	African, Mexican
150	Zaytoon Restaurant	CBD (View Park Towers)	African/Italian/Somali

Sources:

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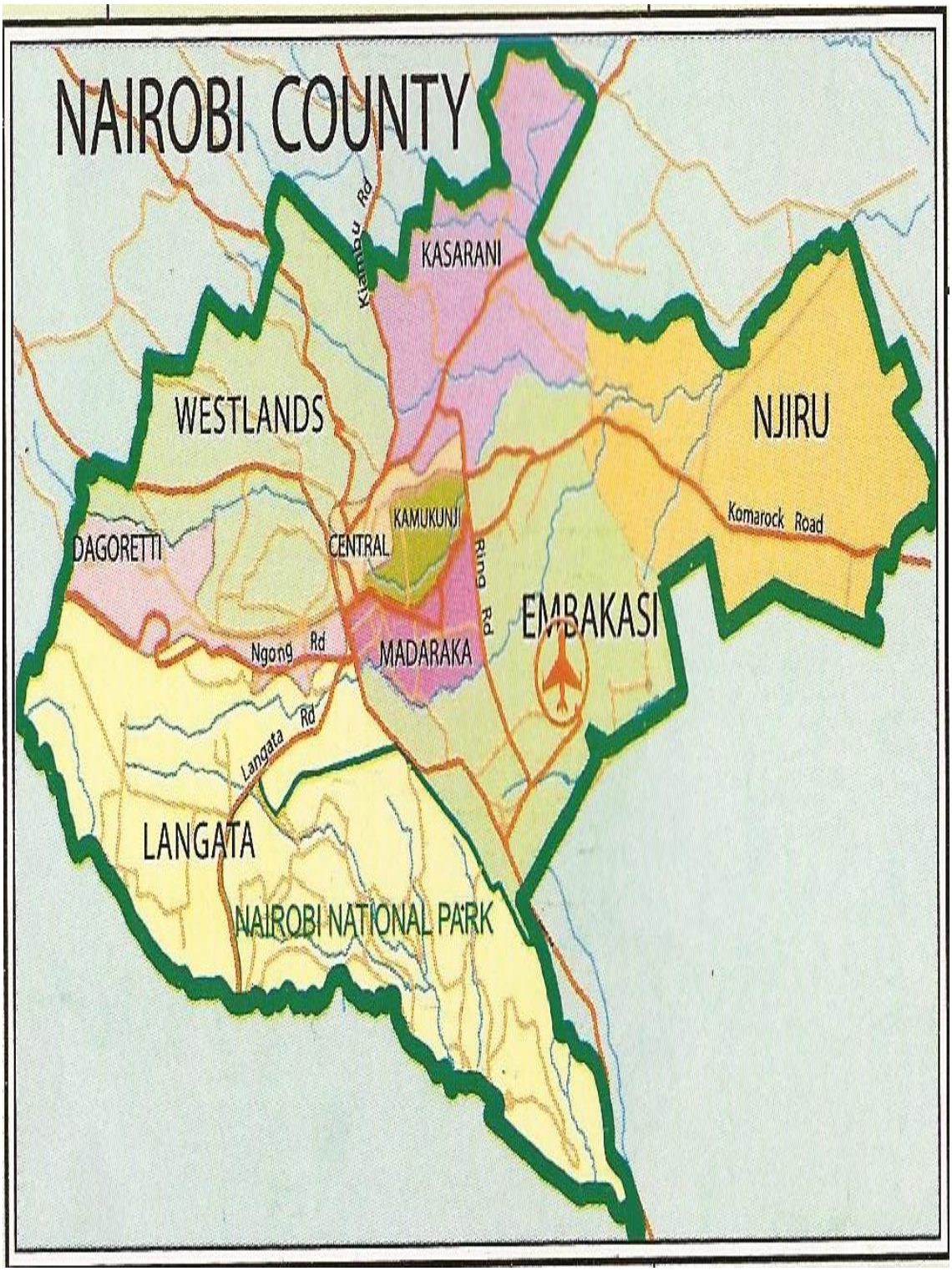
Appendix VII: Map of the Study Area, Nairobi City County



Appendix VIII: Research Permit

THIS IS TO CERTIFY THAT:
MR. PAUL NDERITU MWANGI
of KENYATTA UNIVERSITY, 0-200
NAIROBI,has been permitted to conduct research in *Nairobi County*

on the topic: *FOOD HANDLERS SAFETY AND HYGIENE PRACTICES AS DETERMINANTS OF CUSTOMER CHOICE OF AN INDIGENOUS RESTAURANTS' IN NAIROBI CITY COUNTY, KENYA*

for the period ending:
14th September,2017

Permit No : NACOSTI/P/16/92054/12970
Date Of Issue : 14th September,2016
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEACH CLEARANCE PERMIT

Serial No.A 10946

CONDITIONS: see back page

Appendix IX: Research Authorization Letter

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349, 3310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying Please quote

9th Floor, Utalii House
Uhuru Highway
P. O. Box 30623-00100
NAIROBI-KENYA

Ref: No. NACOSTI/P/16/92054/12970

Date: 14th September, 2016

Paul Nderitu Mwangi
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Food handlers safety and hygiene practices as determinants of customer choice of an indigenous restaurants' in Nairobi City County, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **14th September, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix X: Respondents' Consent Form

Title of Study.

Food Handlers' Hygiene Practices as Determinants of Customers' Choice of Selected African Indigenous Restaurants' in Nairobi City County, Kenya

Restaurant Code: …… Location: ……...

Contact Person: ……... Phone No. (Optional): ……..

Introduction.

•You are being requested to be in a research study on the above topic where your food handlers, their supervisors and customers are population of interest to the researcher.

•Your restaurant was selected as a possible participant because its category as an African Indigenous cuisine establishment

•The researcher request that you read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of Study

The purpose of this study was to fill the gap in knowledge on food handlers' hygiene practices as determinant of customers' choice of an African indigenous restaurant in Nairobi City County by documenting their feedback during the research

Study Procedures

If you agree to be in this study, you will be asked to do the following things:

i) Your food handlers' and customers' will be asked to fill a questionnaire on aspects of hygiene and determinants of customer choice of a restaurant
ii) The food and beverage supervisors will be interviewed on the aspects of hygiene and determinants of customer choice of a restaurant.
iii) All these will be done at the convenience of the establishment s' management

Confidentiality

•This study is anonymous. We will not be collecting or retaining any information about your identity.

•The records of this study will be kept strictly confidential in a locked file and all electronic information will be coded and secured using a password protected file. We

will not include any information in any report we may publish that would make it possible to identify you.

•Your identity will be disclosed in the material that is published. However, you will be given the opportunity to review and approve any material that is published about you.

Right to Refuse or Withdraw

• The decision to participate in this study is entirely up to you. You may refuse to take part in the study at any time without affecting your relationship with the researcher of this study. Your decision will not result in any loss or benefits to which you are otherwise entitled.

Right to Ask Questions and Report Concerns

•You have the right to ask questions about this research study and to have those questions answered by me before, during or after the research. If you have any further questions about the study, at any time feel free to contact me through the contact below.

Consent

•Your signature below indicates that you have decided to volunteer as a research participant for this study, and that you have read and understood the information provided above. You will be given a signed and dated copy of this form to keep, along with any other printed materials deemed necessary by the study investigators.

Subject's Name: ……Signature: ……. Date: ……

Researcher Name: …… Signature: ……. Date: ……...