

**COMPLIANCE WITH THE PROVISIONS OF SECTION 126 OF  
THE PUBLIC HEALTH ACT (CAP 242) BY PUBLIC FOOD PLACES IN  
BUNGOMA 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

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## **DEDICATION**

This thesis is dedicated to my wife Wambui Ogweno, my daughter Adira Ogweno, my parents George Odiwuor and Grace Odiwuor because they have been supportive, patient and optimistic throughout the course of my studies.

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## DEFINITION OF TERMS

- a. **Compliance** - Conforming to a rule, specification, policy, standard or law.
- b. **Café**- a small food outlet selling light meals and drinks
- c. **Hotel**- an establishment providing accommodations, meals, and other services for travelers and tourists
- d. **Bar and Restaurant**- a place where food and alcoholic drinks are served to customers
- e. **Fast Food**- is a specific type of restaurant characterized both by its fast food cuisine and by minimal table service.

**ACRONYMS AND ABBREVIATIONS**

<b>CAP 242</b>	Chapters 242 of the Public Health Act
<b>DPH</b>	Department of Public Health
<b>EPZA</b>	Export Processing Zone Authority
<b>GOK</b>	Government of Kenya
<b>HACCP</b>	Hazard Analysis and Critical Control Points
<b>HMS</b>	Health Management Strategy
<b>IAQ</b>	Indoor Air Quality
<b>KEBS</b>	Kenya Bureau of Standards
<b>KIPPRA</b>	Kenya Institute for Public Policy Research and Analysis
<b>PHO</b>	Public Health Officer
<b>SMEs</b>	Small and Micro- Food Enterprises
<b>SPSS</b>	Statistical Package for Social Sciences
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>WHO</b>	World Health Organization

## ABSTRACT

The public food industry in Bungoma has been experiencing numerous challenges in their quest to comply with the Public Health Act (CAP 242), especially section 126. Consequently, the study sought to establish the extent of compliance with the provisions of Section 126 of the Public Health Act (Cap 242) by public food places in Bungoma County, Kenya. The government has channeled few resources towards enforcement of public health laws in the county regardless of the high levels of court fines and summons issued to proprietors within public food places. Studies determining compliance with public health laws, especially section 126 among public food places have either not been conducted or inaccessible. One of the objectives of the study was to establish the extent of compliance with the provisions of section 126 of the Public Health Act by public food places in Bungoma County, Kenya. The second objective was to establish the factors influencing the public food places proprietors' ability to comply with Section 126 of the Public Health Act. The last objective was to establish the association among socio-demographic characteristics, public food places characteristics, practices and compliance levels. The study took a cross-sectional survey conducted across public food places in Bungoma County. A representative sample was obtained using the fisher et al (1991) approach. The total number of public food places as per the records in the Bungoma County offices is 639. However, the respondents chosen for the study was 149 after the sampling process. The respondents were obtained using a formulated eligibility criterion (exclusion and inclusion). Data was collected using inspection checklists, structured questionnaires, interviews and focus group discussions. A database that facilitated the analysis process was then created using SPSS. However, the analysis process used stata software. The association between hotel characteristics and compliance were considered significant when the p value was equal or less than 0.001. The results on compliance out of a possible score of 5 based on likert scale was certificate of fitness (3.1), wells, tanks and cisterns (2.9), stoves, cooking apparatus and chimney (2.1), construction, repair of dilapidated buildings and escape routes for occupants (2.2) and erection of movable objects, excavations and projections (2.3). The mean compliance for sewerage system was (2.2), removal of refuse on an hourly basis was (2.6), regulating sanitary conveniences was (2.1), ventilation and dimension of rooms was (2.9) and lighting was (2.9). An independent t-test indicated that on average, there indeed was a statistically significant difference in the mean compliance level between male and females with female gender being less compliant than the male gender ( $p=0.0001$ ). A one-way anova test also revealed that those with less education (primary level) were less compliant as compared to their counterparts who schooled up-to secondary and college/university ( $F=13.9$ ,  $p=0.0001$ ). Other factors studied included revenue, relationship with law enforcers during inspection and awareness. The factors showed a statistically significant relationship with compliance based on chi-square results ( $p<0.005$ ). However, bribery did not show a positive relationship with compliance. The study recommends that the county government should adapt cooperative enforcement (co-regulation) to enhance compliance. Health literacy is an important approach that increases the understanding of the law among proprietors in the county through enhancing familiarity.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background to the study**

The Public Health Act, Chapter 242, is an instrumental law that safeguards the lives of Kenyans. Section 126 within the act is perhaps the most crucial because it focuses on building and sanitation. It addresses specific concerns such as the need for food enterprises to keep their premises clean and free from nuisances so as not to endanger the lives of the consumers. The specific provisions within section 126 incorporate appropriate lighting, ventilation, prevention of overcrowding, disposal of refuse, cleaning buildings and eliminating foul smell (GOK, 1972).

A systematic review of literature concerning compliance with public health laws and its effect on health presents a complex relationship. Fallon and Zygodzinski (2011) state that determining the extent of compliance with policies and laws place a society in a better position to embrace health management strategies. They further indicate that when compliance levels are high, there is likelihood that health challenges, especially, diseases will reduce significantly.

It is necessary to determine the level of compliance with the provisions in section 126 in order to provide recommendations to the food enterprises, local county government and central government on the most suitable policies that will safeguard human health. The location of an enterprise determines compliance since facilities in the urban areas are more compliant due to regular supervision. The process of determining whether institutions are compliant is dependent on number of consumers served.

A nonfunctional infrastructure tends to lower the productivity of a business (Kippra, 2005). Among the physical infrastructural facilities that should be of concern to a public food place, especially Bungoma County includes water supply, ventilation, lighting and sewerage because they improve the state of human health. Considering the number of arrests, court summons and fines, it is safe to say that the level of compliance with the provisions of Section 126 is wanting (Oloo, 2010). The dilapidated nature of food entry points is a major contributor to the food-borne illnesses in the County, especially, diarrhea and typhoid

The existing relationship between the government and public food places has been hostile, biased and characterized by violent confrontations (Meggitt, 2003). It appears that public food places in Bungoma County are nuisances to the environment because they scar urban planning. The needs of the facilities are not considered during planning. It means that their needs are placed outside the required planning system. Consequently, a significant proportion of the public food places set up their premises in unsafe areas that do not meet the requirements of section 126 of the public health act. These areas are characterized with bad conditions like unsafe water, poor sanitation and hygiene. Therefore, people who eat from such food premises are at high chances of contracting food borne illnesses.

It is very surprising that regardless of the benefits acquired from public food places such as providing employment, effective utilization of rare resources and revenue generation,

local authorities deny them the rights of property forcing them to undertake their business in secrecy (Meggitt, 2003). Consequently, they perform their business in poor conditioned areas, which fail to comply with section 126 of the public health act. Such businesses turn out to be a threat to human health.

The local authorities have imposed penalties on premises that run their business contrary to the requirements. Therefore, the business premises in the county offer bribes in order for them to run their businesses unsafely (Oloo, 2010). Eventually, the businesses that comply with the Act are most likely to be penalized while those that evade operate their business smoothly due to bribery. This may lead to health problems in such areas.

The full extent of the burden and cost of non-compliance is currently unknown in developed and developing countries. No documented evidence has been found to establish the correlation between human factors, structural factors and compliance. Consequently, the study aims to provide crucial data to design systems and procedures that will enhance compliance.

Compliance with the Public Health Act, especially section 126 is an important health management approach because it sets the stage for acknowledging the importance of policy and law on human health. It is necessary to determine the level of compliance with the Public Health Act by the food industry in Bungoma County. Food is a major determinant of the health status of individuals within the society. It is necessary for the institutions dealing with food to follow stipulated policies, laws and regulations during

preparation, distribution and consumption. The study determines whether the comprehensive adherence to policies, laws and regulations, especially Public Health Act (CAP 242), Section 126 enhances health management approaches. Cap 254 is also crucial, but appears vague on structural and sanitation requirements.

## **1.2 Statement of the problem**

Complying with laws, policies, regulations and guidelines is a crucial step in safeguarding human health. In Sub-Saharan Africa, very few studies have been conducted on the effect of public health laws on the well-being or health of the population. The situation is dire in Kenya, especially Bungoma County because few studies directly highlight the relationship between compliance and health. Administrative units across the country record significant levels of arrests, court summons and fines paid by public food places proprietors after violation of specific provisions of the law. The statistics from the administrative units highlight that all is not well with compliance. Adherence to health laws and policies that should be ordinarily the first steps of health management has been neglected. Failure to comply with such laws has increased the incidences of disease, contributed to poor health conditions, and diminished economic performance in the County. The Government of Kenya in 2008 indicated that Bungoma County is predisposed to waterborne and food borne illnesses that have contributed to several deaths (Government of Kenya, 2009). Consequently, it is necessary to determine the factors affecting compliance with the provisions in this section and propose corrective measures.

## **1.3. Justification of the study**

The full extent of the burden and cost of non-adherence to health laws is currently unknown in the developed and developing countries. The findings of this study will help government and non-government organizations to determine the impact of non-compliance on human health. Many diverse studies have been conducted Bungoma

County with the intention of improving the health status of the populace (Kumar, 2005). These studies include control of malaria, transmittable diseases such as HIV and enhancing the quality of orphans, infants and mothers' livelihoods. However, studies relating to compliance with section 126 of Public Health Act in public food places have not been the focus of such researchers. In addition, Bungoma County is predisposed to food borne and waterborne illnesses that could be attributed to the failure to comply with stipulated regulations (Government of Kenya, 2009). The regulatory authorities and public food places experience difficulties working together to enforce the regulations. It has become increasingly difficult for the concerned parties to understand how to apply the law and the role of the government in the compliance process. Consequently, this study aims to provide crucial data that will help design systems and procedure that will enhance full compliance with the law. Furthermore, the study will appeal to the government because compliance with Public Health Act sets the stage for preventive health care.

## **1.4 Research Objectives**

### **1.4.1 General objective**

To determine compliance with the provisions of Section 126 of the Public Health Act (Cap 242) by public food places in Bungoma County, Kenya

### **1.4.2 Specific objectives**

1. To determine the extent of compliance with the provisions of section 126 of the Public Health Act by public food places in Bungoma County, Kenya.
2. To determine the factors influencing the public food places proprietors' ability to comply with Section 126 of the Public Health Act
3. To determine the association between socio-demographic characteristics of proprietors, characteristics of public food places and compliance levels?

## **1.5 Research questions**

1. What is the extent of compliance with the provisions of section 126 of the Public Health Act by public food places in Bungoma County, Kenya?
2. What factors influence public food places proprietors' ability to comply with Section 126 of the Public Health Act?
3. What is the association between socio-demographic characteristics of proprietors, characteristics of public food places and compliance levels?

## **1.6 Hypothesis**

1. Awareness, bribery, revenue and relationship with law enforcers during inspection do not influence compliance with section 126 of the Public Health act

2. Socio-demographic factors of proprietors, public food place characteristics and practices do not influence compliance with the provisions of section 126 of the Public Health Act.

### **1.7 Significance and Anticipated Output**

This is a key study that illustrates the complex relationship between compliance with the Public Health Act (Cap 242), section 126 and health management outcomes. It provides crucial data on the role of proprietors in preserving the health of the County's residents. The results of the study call for urgent measures that will improve the level of compliance and enhance appropriate health management processes. In addition, it highlights the roles of the regulatory authorities, especially, the county inspectors in enforcing appropriate laws and processes that will enhance the health standards in the County. The anticipated output is empowering the central and local government to adapt the right measures that will improve the health standards in the region. It is hoped that the government could use data from the study to understand compliance issues in other counties across Kenya. It is simpler for the public food places proprietors in the county to embrace appropriate health management approaches at the lowest ebb by empowering them and regulatory authorities.

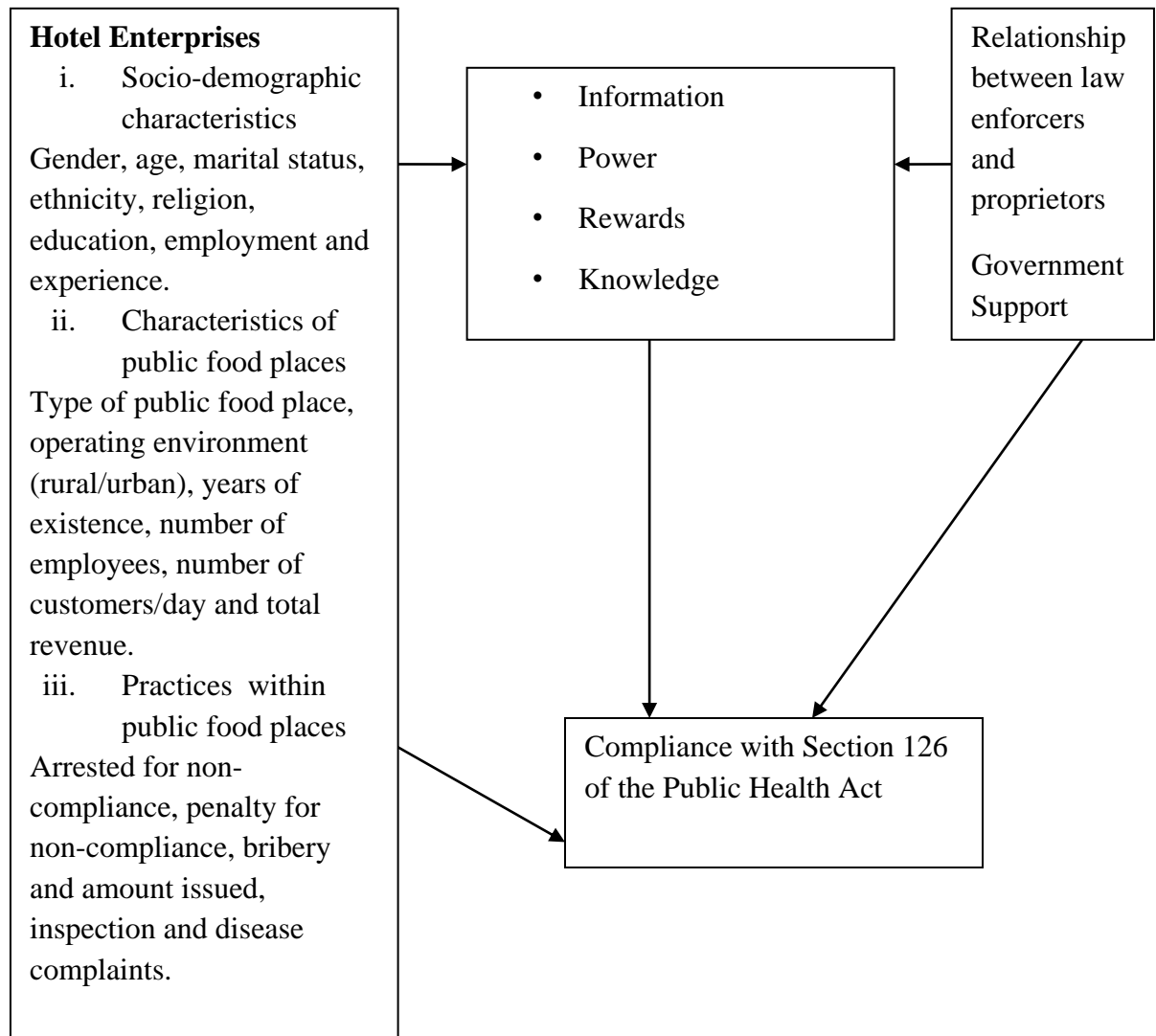
### **1.8. Limitations of this study**

The study only sampled public food places that had been licensed as required by law although many informal food settings exist. In addition, the study did not focus on the general population, though they play a crucial role in compliance.

## **1.9 Conceptual Framework**

A compliance model developed by Hui and Cross (2011) determined that compliance with Public Health Law is dependent on socio-demographic characteristics, public food places' characteristics and practices in such facilities. The benefits of compliance that may motivate the participants to comply with the law include rewards, knowledge and information. The relationship between law enforcers and proprietors together with government support may prompt a proprietor to seek rewards, knowledge, power and information.

**Figure 1.9 Conceptual Framework**



Adopted from (Hui and Cross, 2011).

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Background of Public Health Act (CAP 242)**

The Public Health Act is an act of parliament that proffers various guidelines to safeguard human health. Section 126 of the act deals with buildings and sanitation (Government of Kenya, 1972). According to the Public Health Act (Cap 242), section 126, the cabinet secretary, who is in charge of Public Health and Sanitation in coordination with the corresponding board should initiate and confer powers with the intention of improving the health status of the population. The role of the cabinet secretary and boards is to avoid a situation whereby the population encounters an environment that is likely to harm their health. The general facets of Section 126 incorporate the inspection of land, dwellings, and buildings.

The act allows for the inspection of land, dwellings, buildings, factories and trade premises. It also advocates for securing and keeping the area clean and free from nuisance so as not to endanger health (WHO/AFRO, 2007). Furthermore, it addresses the construction of buildings, the provision of proper lighting and ventilation and the prevention of overcrowding.

The act allows for periodical cleansing, whitewashing and treatment of dwellings. It also allows for the cleansing of land and the removal of rubbish or refuse. Furthermore, the drainage of land, streets or premises, the disposal of offensive liquids and the removal and the disposal of rubbish, refuse, manure and waste matters are equally fundamental.

Public Health Act, Section 126 equally deals with the establishment and carrying on of factories or trade premises that are liable to cause offensive smells or effluvia, or to discharge liquid or other materials liable to cause such smells or effluvia. Furthermore, it addresses pollution to the streams that cause nuisances or injuries to health.

Chapter 242 on a broader level also deals with the subdivision and the general layout of land intended to be used as building sites. It also addresses the level construction and other requirements necessary when building, number, direction and the width of streets and thoroughfares. The act also limits the number of dwellings or other buildings to be erected on a given land (Donherty, 2004).

## **2.2 Extent of compliance with public health laws among public food places**

Yapp and Fairman (2004) indicate that small and medium sized enterprises (SMEs) account for 99.8 per cent of all food businesses within the catering, hotel and retail sectors in the UK. Micro-businesses dominate these sectors in terms of the number of enterprises. The Food Standards Agency (FSA) states that 45 per cent of all businesses inspected in 2000 were found to have breached some food regulations in some way. This means that a significant proportion of SMEs do not meet the requirements of the food hygiene legislation. The author has failed to tie the non-compliance with law enforcers, government and the broader public. A look at the situation in Kenya indicates that small and medium sized enterprises constitute close to 95 % of the public food places (Oloo, 2010). However, the level of compliance is not provided.

Bas et al (2007) indicate that only 33.0% of managers in Turkey said they had a food safety management system. Another study done by Kuo Nae-Wen et al (2008) targeted hotels in Taiwan. Four major problems were identified after the comprehensive Indoor Air Quality (IAQ) audits were associated with lighting, ventilation and disposal of refuse. They are: (1) low room temperature ( $21.8^{\circ}\text{C}$ ), (2) insufficient air exchange rate ( $<1.5\text{ h}^{-1}$ ), (3) formaldehyde contamination ( $>0.02\text{ ppm}$ ), and (4) the microbial pollution (total bacteria: 2,624–3,799 CFU/m<sup>3</sup>). The average compliance surpassed the halfway mark.

### **2.3 Factors influencing compliance with section 126 of public health law by public food places in Kenya**

Oloo (2010) lists the factors that affect compliance with public health law as corruption, inadequate resources, ignorance and lack of motivational incentives. However, the author has failed to examine the impact of such factors on compliance, especially the understanding of the law among proprietors. Another study by Bas et al (2007) indicates that the absence of prerequisite programs was identified by (92.2%) of the respondents as a barrier to compliance. Lack of knowledge about food regulation was identified by (83.5%) of the respondents, lack of time was identified by (88.7%) of the respondents, staff turnover was identified by (80.9%) of the respondents, lack of employee motivation was identified by (83.5%) of the respondents. In addition, complicated terminology was identified by (87.0%) of the respondents and lack of personnel training was identified by (91.3) of the respondents. As a conclusion, lack of knowledge about

laws and other safety programs were identified as the main barriers for safety in food businesses.

### **2.3.1 Level of awareness on section 126 of Cap 242**

The understanding of Cap 242, especially, section 126 influences the ability of the public food places proprietors to enforce the law. It is important to highlight the factors influencing awareness that include health literacy, the availability of public health infrastructure and public health ethics. The Kenyan government is partly responsible for making the workforce within the food industry to understand the provisions of the law. Bas et al (2007) indicate that 63.5% reported that they did not really know public health laws related to food places while 23.5% reported that it was too complicated.

According to Yapp and Fairman (2004), health literacy determines whether proprietors within public food places understand issues pertaining to public health law. The author defines health literacy as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. However, the author does not state whether health literacy enhances the skills of proprietors and enable them to understand the health issues mentioned. Health literacy is also dependent on the cultural dispensation in a given area. Other factors that influence health literacy are the demands of the healthcare and public health systems as well as the demands of the situation/context. Yapp and Fairman (2004) showed that poor health literacy prevented compliance, with owners blaming their own staff for the issues of noncompliance. For example, proprietors within public

food places failed to understand the legislative requirements because they were not motivated to access the information (Dolan and Humphrey, 2004).

Callahan and Jennings (2002) define public health ethics as aspects concerned with the ethical dimensions of professionalism and the moral trust that society bestows on public health professionals to act for the common welfare (Callahan and Jennings 2002). This form of ethical discourse stresses the distinct history and traditions of the profession, seeking to create a culture of professionalism among public health students and practitioners through learning and education. Callahan and Jennings (2002) fail to mention that ethics instills in professionals a sense of public duty and trust, especially its effects on compliance. Professional ethics are role oriented, helping practitioners to act in virtuous ways as they undertake their functions.

Yapp and Fairman (2004) agree that public health infrastructure is fundamental to the provision and execution of public health services at all levels. A strong infrastructure provides the capacity to prepare for and respond to threats. However, Yapp et al (2006) fails to mention that infrastructure is the foundation for planning, delivering, and evaluating public health. The components of public health that contributes to the understanding of law includes a capable and qualified workforce include up-to-date data and information systems, public health agencies capable of assessing and responding to public health needs (Yapp and Fairman, 2004).

### **2.3.2 Meaning of compliance, relationship with enforcers and resources**

One of the most fundamental issues raised relates to the meaning of compliance. Public food places view compliance as completing the inspection form during the formal food hygiene inspection (Gebrehiwet, Ngqangweni and Kristen, 2007). However, enforcing agencies and academics view it as a continuous, evaluative process of the business operation (Gebrehiwet et al., 2007). Viewing the compliance process as an on-going process raises particular problems for any type of regulatory strategy. Public food places have a reactive attitude in dealing with compliance process, especially law enforcers. This is evident from the identification and interpretation of regulatory requirements, through to their implementation and evaluation (UNCTAD, 2008). Other barriers, such as the low levels of motivation, knowledge and trust affected relationship with enforcers. Proprietors had a reactive attitude towards dealing with food safety legislation as they relied almost entirely upon enforcers interpret relevant requirements in a practical way for their business (Yapp and Fairman, 2004). For example, there is a general requirement to keep the premises clean and maintained in good repair and condition. Many public food places relied upon the enforcers to advise them of non-compliant areas within the premises, rather than taking any action proactively. The absence of management systems within public food places meant that monitoring of food safety requirements tended not to be undertaken (Yapp and Fairman, 2004). This was a particular feature relating to temperature control, with many examples of incorrect monitoring by staff being left undetected until the formal inspection. For hazard analysis requirements, few public food places had actually reviewed the plans implemented in their business (EPZA, 2005). Proprietors of public food places fail to understand that the

steps in the compliance decision process are not made internally and independently by public food places but are influenced by external factors (EurepGAP, 2007).

It is becoming increasingly difficult for the county personnel to enforce the law. The personnel are not properly motivated to conduct their roles to a satisfactory level (Jaffe and Masakure, 2005). In addition, the public food places have adapted underhand techniques that have made it difficult to meet the provisions stipulated by the law. It appears that roles are not coordinated appropriately between the government, regulatory personnel and proprietors. Jaffe and Masakure (2005) further highlight the role Department of Public Health (DPH) as to safeguard the health of consumers through food safety and quality control, surveillance, prevention and control of food borne diseases/illnesses. However, Jaffe and Masakure (2005) fail to highlight the relationship between the different departments in enhancing compliance. For example, the police and medical personnel play crucial roles that have not been mentioned.

### **2.3.3 Corruption (Bribery) and compliance**

One of the practices that contribute to non-compliance is corruption (Nelson and De Bruijn). It is unfortunate that research does not indicate whether after issuing bribes, the owners continue with the quest for licenses, certificate of fitness and inspection (Ewen, Judy, Charles and Barry, 2007). A study conducted by Nelson and De Bruijn (2005) also states that bribery is a result of a policy based on formalization. It is a voluntary transaction between food operators and government. It focuses on mutual benefits and

reduces the risk of damaging fragile enterprises and livelihoods for little benefit. The personnel do not formalize the business processes and take bribes.

## **2.4 Association of socio-demographic variables, public food place characteristics, occurrences and compliance level**

### **2.4.1 Socio-demographic variables**

Education is an important variable that determines compliance with public health laws. The food enterprises are required to hire qualified staff that has capacity to ensure the quality levels that pertain to food production are implemented (Hui and Cross, 2011). The workforce should be conversant with the underlying health regulations. Their expertise will improve the quality of food while reducing the risks that are likely to emerge. In as much as Hui and Cross (2011) present education as an important variable, they fail to highlight the relationship between proficiency of staff, resources to ensure quality preparation, serving and provision of food with compliance levels. The public food places should disburse relevant information to the consumers by notifying them of any elements that can become a threat to their wellbeing (Yach, Khan and Bradley 2012). An educated staff will recognize that the marketing approach must conform to the marketing principles acceptable by law (Sharma, Teret and Brownell, 2010). Certain food products sold by the public food places are only suitable for adults and not children. It is vital to direct the marketing effort towards the mature clientele (Mausch, Mithofer, Asfaw and Waibel, 2006).

Experience within the food industry is a determinant of compliance because an experienced proprietor dismisses reactive decision-making that allows the enforcer to become the predominant driver (Fairman and Yapp, 2005). Hui and Cross (2011) confirm that experience combined with education is a significant driver of compliance.

#### **2.4.2 Characteristics, practices, occurrences of public food places**

According to Bas, Yuksel and Cavusolgu (2007) prerequisite programs and inadequate physical condition of the facility are institutional characteristics that limit compliance. Training programs, both basic food safety and Hazard Analysis and Critical Control Points (HACCP) to support implementation of prerequisite programs and HACCP are also fundamental.

Yapp and Fairman (2004) indicate that it is accepted that small food enterprises face particular challenges in their business operations. These include short records of accomplishment, heavy reliance on niche markets; lack of specialist skills; low cash flow; small asset base and the need to make changes in structure and ownership at various stages of growth. These characteristics of small and micro-businesses impact upon their ability to comply with legislative requirements, in terms of time, skills and resources required to implement improvements.

According to Ewen et al., (2007) premises that sell, store, manufacture or handle foods are inspected to ensure compliance with laws and standards. The authors cite that food handlers are partly responsible for the spread of diseases. However, the authors do not explicitly state whether inspection is a precursor of compliance. In addition, it is

difficult to determine whether inspection, enforcement, compliance and health management are related. The Food Hygiene Regulations in the United States and Public Health Act (Cap 242), section 126 gives the minimum requirements for such premises. The laws specify the standards of cleanliness, construction, layout and practices that are necessary. The public health officers in-charge readily provides advice to all involved in food businesses be they owners of establishments, food handlers or cleaners. The inspection is very involved and looks not only at the cleanliness of the premises, but other areas like the correct storage of foods, temperature control and stock rotation, pest proofing of the premises, disposal of food waste, staff training and awareness.

Mwangi (2005) indicates that the licensing process establishes the minimum requirements for practices in public eating-places. It also empowers authorized officer(s) to license eating-places and to revoke the license where a violation has taken place. The Public Health Act requires that every food vendor be registered and that food sold to the public is fit for human consumption. It also empowers the authorized officer to inspect premises and sample foods for analysis (Mwangi, 2005). However, Mwangi fails to establish the relationship between licensing and other aspects of compliance.

## **CHAPTER THREE: METHODOLOGY**

The chapter presents the study design, study area, map of the study area, study population, sample size determination, sampling and data collection methods. In addition, it will focus on the data collection procedure, data analysis, data presentation and ethical consideration.

### **3.1 Study design**

This was a cross-sectional descriptive study among proprietors of public food places in Bungoma County. Quantitative approach through structured questionnaire was used to collect data on demographic factors, ability to enforce the law, compliance level and practices within public food places that contribute to health management. The study is descriptive because it explores the factors influencing compliance with existent laws. The results will focus on describing, explaining, and validating findings.

### **3.2 Study area**

The study was conducted in Bungoma County and the sample was drawn from six administrative units. The total number of public food places within the study area as per the statistics available at the county government is 639. The area has a population of 1,375,063 and an area of 2,069 km<sup>2</sup>.

### **3.3 Study population**

The primary study populations were proprietors of public food places. However, law enforcers participated in the study through key informant interviews. According to a

report by the county government in Bungoma, the total number of proprietors in Bungoma County serving over 20 people in a day is 639. However, the appropriate number for the study is 149 after the sample size calculation.

### **3.3.1 Inclusion Criteria**

The proprietor in the public food place had to be involved in serving some kind of foodstuff. The proprietor had to be serving over 20 people in a day in order to qualify for a certificate of fitness. It was also crucial for the enterprise to have legal rights and responsibilities of conducting business (License).

### **3.3.2 Exclusion criteria**

The proprietors of public food places that were excluded from the study had closed the premises. The second exclusion criterion was non-responsiveness or refusal to participate in the study. Thirdly, they were serving less than 20 people in a day as they could not acquire a certificate of fitness.

## **3.4 Sampling techniques and sample size**

### **3.4.1 Sampling Design**

The sampling frame included proprietors of public food places involved in the preparation, selling and distribution of food. The stratified random sampling technique was utilized. Firstly, Bungoma County was purposively selected for the study. The first process involved dividing the population into smaller groups based on the administrative region that formed the strata. A random sample from each stratum is taken in a number

proportional to the stratum's size when compared to the population. These subsets of the strata were pooled to form a random sample.

### 3.4.2 Sample size determination

The desired sample size was determined using the following Fisher et al 1991 formulae; -

$$n = \frac{z^2 pq}{d}$$

Where:

$n$  = the desired sample size (when population is greater than 10,000).

$Z$  = the standard normal deviate, set at 1.96, which corresponds to 95% confidence level.

$P$  = in this study 0.131 was used as this was the mean proportion of violation (Oloo, 2010).

$$q = 1.0 - p$$

$d$  = degree of accuracy desired, here set at 0.05 corresponding to the 1.96 z-statistics used in the numerator

In substitution,

$$n = \frac{1.96^2 \times 0.131 (1 - 0.131)}{0.05^2} = 175$$

The total number of public food places in the study ( $N$ ) = and because  $N$  was less than 10,000 the second formula was applied to determine the sample size thus:

$$nf = \frac{n}{1 + \frac{n}{N}}$$

Where:-

$N_f$  = desired sample size for a population more or equal to 10,000.

$n$  = desired sample size for population more than 10,000 which is found to be 175.

$N$  = parent population which is 639.

In substitution,  $NF = 175$

$$1 + \frac{639}{4.75} = 136$$

Therefore desired  $n = 136$  hence desired sample size was = 136 proprietors of public food places upon adjustment for incomplete responses and non-response  $136 + 13 = 149$

### 3.4.3 Proportionate distribution of samples

<b>Sub-County</b>	<b>Population of public food places with proprietors serving over 20 people</b>	<b>% population</b>	<b>Sample</b>
<b>Bumula</b>	54	8.45	11
<b>Kanduyi</b>	224	35.05	48
<b>Kimilili</b>	78	12.2	17
<b>Mt. Elgon</b>	87	13.6	18
<b>Sirisia</b>	51	7.9	11
<b>Webuye</b>	145	22.6	31
<b>Total</b>	639	100%	136

Source (Bungoma County, 2013).

## 3.5 Variables

### 3.5.1 Independent variables

The independent variables included socio-demographic characteristics, characteristics of public food places, practices within public food places, relationship between law enforcers and hotel owners. Other variables included information, rewards and knowledge

### 3.5.2 Dependent variables

The extent of compliance with section 126 of Cap 242.

### **3.6 Data collection procedure**

Inspection checklists and questionnaires were instrumental when collecting quantitative data. The inspection checklist was based on a likert scale and collected data focusing on certificate of fitness, well, tanks, cisterns, stoves, cooking apparatus, chimney, escape route for occupants, erection of movable objects, excavations and projections, sewerage system, removal of refuse on an hourly basis, regulating sanitary conveniences, ventilation and lighting. The structured questionnaires and inspection reports provided data that was objective and reliable for hypothesis testing. Qualitative techniques incorporated focus group discussion and key informant interviews. The focus group discussion was conducted among (11) proprietors of public food places though the entire sample was requested to participate. The interviews were conducted among (4) law enforcers attached to the county health department. The principal researcher coordinated and ensured that the data collection process was properly administered. Research assistants were carefully selected and trained on how to administer the questionnaires, conduct inspection and focus group discussions.

#### **3.6.1 Pretesting of research instruments**

The study tool was pretested in Kondele, Kisumu County. This area was chosen because it has similar social features as the public food places in Bungoma County. A sum of 10 public food places was interviewed for the pre-test phase. The pilot phase tested the accuracy and clarity of the questionnaires and modifications were effected on questions found to be ambiguous.

### **3.6.2 Validity**

The validity is the extent to which a test (i.e. questionnaire in this study) measures the variables under study. Validity ensures accurate application and interpretation of the results of a study. In this study, validity was achieved by crosschecking, inspecting and scrutinizing the information entered in the questionnaires and this ensured that the data that was collected was accurate, relevant, consistent and homogenous.

### **3.6.3 Reliability**

Reliability of the questionnaires in this study was ensured by designing closed-ended questions that measured the level of compliance. It explored the level of understanding concerning provisions of the public health act, factors influencing public food places proprietors' ability to comply, Public Health Act practices that foster health management and attitude and perception of public food places owners' towards compliance of Public Health Act. The same sets of questions were administered to all respondents. The responses differed based on respondent characteristics rather than design effects. The conditions under which the design took place were controlled to limit external variations such as boredom. This was reinforced through briefing, supervising research assistants, and crosschecking entries.

### **3.7. Data analysis and presentation**

Data cleaning was supervised and entailed creating algorithms to identify syntax errors. In addition, auditing and workflow specifications were instrumental in the cleaning process. Quantitative was presented using tables that summarize the major findings.

Qualitative data is presented using content analysis that identifies the major themes. Results from the questionnaires, focused group discussions and interviews were reviewed to determine the contributing factors to the non-compliance. Data collected was analyzed after creating a database in SPSS and conducting the analysis using strata.

### **3.8 Logistical and ethical consideration**

The purpose of the study was explained by the researchers to all potential participants in order to get informed consent from the eligible respondents. Kenyatta university graduate school, Kenyatta university ethical committee and National Commission for Science, Technology and Innovation (NACOSTI) approved the study.

## **CHAPTER FOUR: RESULTS AND DISCUSSION**

### **4.0 Introduction**

The study targeted 149 proprietors of public food places in Bungoma County. However, 116 proprietors responded to the questionnaires giving a response rate of 77.9%. This chapter presents the results of the study based on the procedure described in the research methodology. The data provides socio-demographic characteristics of public food places proprietors, general characteristics and practices of the enterprises surveyed. The data also highlights the level of knowledge of public food places proprietors concerning the public health act and extent of compliance by public food places proprietors to the provisions of section 126 of the Public Health Act Cap 242 in the Public Health Act. The study also looked at the factors that influenced public food places proprietors' ability to comply with section 126 of cap 242. Summary tables are used to report the data.

#### **4.1. Socio-demographic characteristics of respondents**

The socio-demographic characteristics of proprietors within public food places are summarized in table 4.1 below. Over half of the proprietors were women 62 (53.4%). The median age was 39 (20-64) years. Over half of the proprietors were married 69 (59.5%) and of African origin 109 (94 %). With regard to education, majority of the respondents had tertiary education 54 (46.6%) and of these, only 16 (13.8%) were trained in a hotel related course. With regard to employment, majority, 92 (79.3%) did not have other formal employment elsewhere apart from the public food places and most them had less than five years of experience in the public food industry 50 (43.1%).

**Table 4.1 Socio-demographic characteristics of the study respondents**

Variable	No. (n)	Percentage (%)
<b>Gender</b>		
Male	54	46.6
Female	62	53.4
<b>Age</b> Mean (SD) 39.0 ( $\pm$ 9.4)yrs Median Min-Max39 (20-64) yrs		
20-29 years	21	18.1
30-39 years	37	31.89
40-49 years	43	37.06
50-64 years	15	12.93
<b>Marital status</b>		
Single	19	16.4
Married	69	59.5
Divorced/separated	10	8.6
Widowed	5	4.3
Cohabiting	13	11.2
<b>Ethnicity</b>		
Black African	109	94
White	1	0.9
Indian/Asian	6	5.2
<b>Religious Affiliation</b>		
Christian	97	83.6
Muslim	14	12.1
Hindu	5	4.3
<b>Education</b>		
<b>Highest level</b>		
Primary	20	17.2
Secondary	42	36.2
College/University	54	46.6
<b>Educational training</b>		
hotel course	16	13.8
Non-hotel course	100	86.2
<b>Employment</b>		
Employed elsewhere	24	20.7
Not employed elsewhere	92	79.3
<b>Experience in the hotel industry</b> Mean (SD) 6.8 ( $\pm$ 6.2) yrs 5 (0.25-30) yrs		
<5 years	50	43.1
5 - <10 years	39	33.62
$\geq$ 10 years	27	23.27

*No of respondents are 116. Data are presented as number (No.) of respondents and proportions (%).*

#### **4.2. Characteristics of the public food places**

Majority of the public food places surveyed were restaurants 43 (37.06%) followed by cafés at 39 (33.62%), bar and restaurant 20 (17.24%) and fast food 14 (12.06 %). Majority of the enterprises were operating in urban environment 94 (81.03%) while 22 (18.96%) were operating in rural areas A significant proportion of the food places had been operational for less than 10 years. The mean years of existence for the public food places was 6.7 ( $\pm 4.50$ ) years while the median years of existence 5.7(0.25-20) years. On average, the places had 9.7 ( $\pm 9.3$ ) employees serving 99.1 ( $\pm 75.9$ ) customers per day and making a monthly total revenue collection with a median of Kshs. 70,0000 (10,000-400,000) as evident in table 4.2 in the next page.

**Table 4.2 Characteristics of the public food places**

Variable	No. (n)	Percentage (%)
Type of public food places		
Café	39	33.62
Restaurant	43	37.06
Bar and Restaurant	20	17.24
Fast food	14	12.06
Operating environment		
Rural	22	18.96
Urban	94	81.03
Years of existence		
<5 years	37	31.89
5 - <10 years	43	37.06
≥10 years	36	31.03
Number of employees Mean (SD) 9.7 (±9.3) Median Min-Max 7 (2-48)		
Number of customers/ day Mean (SD) 99.1(±75.9) Median Min-Max 70(20-300)		
Total revenue per month (Kshs) Mean (SD) 87, 281 (77,978) Median Min-Max 70,000(10,000-400,000)		
<Kshs 20,000	15	12.94
≥Kshs 20, 000 and < Kshs 50,000	29	25.00
≥Kshs 50,000 and < Kshs 100,000	43	37.06
≥Kshs 100,000	29	25.00

*No of respondents are 116. Data are presented as number (No.) of respondents and proportions (%).*

### **4.3. Practices and occurrences within the public food places**

A total 16 (13.8%) respondents had been arrested for non-compliance while 100 (86.2%) have never been arrested for non-compliance. A total of 22 (18.96%) of the public food places had had been penalized for non-compliance paying on average a penalty of Kshs. 13, 285( $\pm 10,520$ ). Bribery was a common practice among the enterprises with 6 (5.7 %) reporting to have given a bribe on average Kshs 6, 208 ( $\pm 7,949$ ). In addition, 35 (30.7%) of the respondents indicated that they had not been inspected by officials of the local authority while 81 (69.83%) reported to have been inspected by the local authority. A total of 55 customers visiting the public food places had complained of suffering from diarrhea and typhoid after visiting the facility in the last 12 months as evident in table 4.3 below.

**Table 4.3 Practices within public food places**

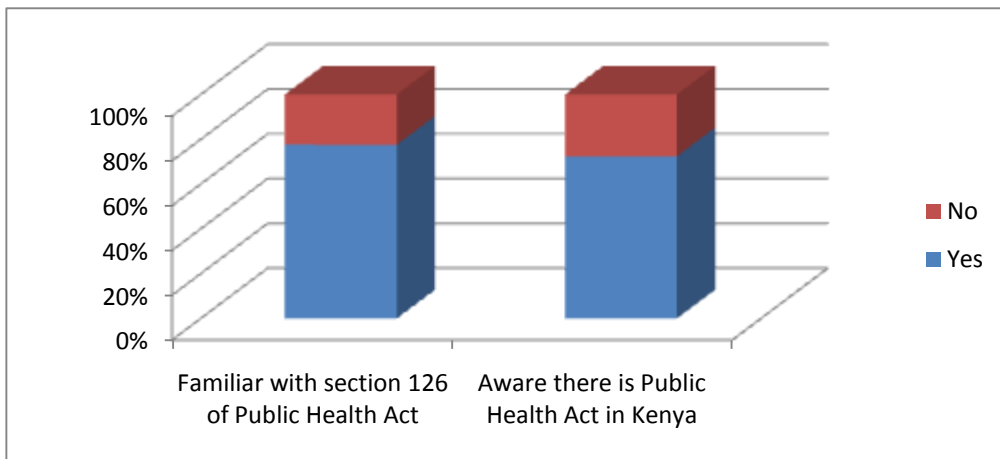
Variable	No. (n)	Percentage (%)
Arrested for non-compliance		
Yes	16	13.79
No	100	86.21
Penalized for non-compliance		
Yes	22	18.96
No	94	81.04
Customers complained to have suffered from		
Diarrhea	28	24.13
Typhoid	16	13.79
Diarrhea and typhoid	11	9.48
No complain	59	50.86
Cost of the penalty Kshs Mean (SD) 13, 285 ( $\pm$ 10,520) Median 14, 000 ( 10-40,000)		
Issued bribe after arrest		
Yes	6	5.7
No	110	94.3
Amount of Bribe Mean (SD) 6, 208 ( $\pm$ 7,949) Median 3,687 ( 3- 39,000)		
Inspection by the authorities		
Yes	81	69.83
No	35	30.17

*No of respondents are 116. Data are presented as number (No.) of respondents and proportions (%)*

#### 4.4. Awareness on section 126 of the Public Health Act

The level of awareness as established by the respondents who indicated that they knew about the existence and role of Section 126 of Public Health Act is illustrated in figure 4.1 below. Over two thirds 84 (72.4%) of the proprietors within public food places knew about the Public Health Act while 32 (27.6%) were not aware of the act. The proportion of respondents familiar with section 126 of the Public Health Act was 90 (77.58%) while those unfamiliar were 26 (22.42%).

**Figure 4.1 Awareness and training of section 126 of the Public Health Act**



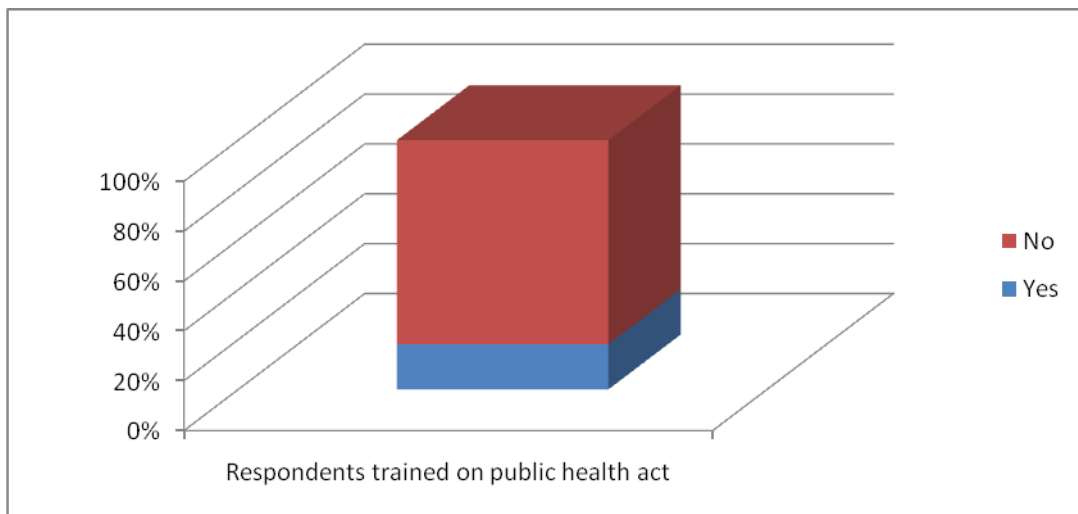
The extent of awareness is also evident in the following caption from a focus group discussion (FGD). The respondent below is classified as not being aware.

*“Well, I don’t actually know a lot, because no one has ever taught me about them anyway, but at least I know, like I need a medical license, or something like that, I think it is supposed to be renewed I don’t know every year or so often, by the way you are also supposed to remove refuse every minute, ha-ha..and then....then...then what?....(pauses for several seconds) ...oh yeah, things like proper lighting, ventilations need to be adequate and so many other things,...Doctor (referring to the researcher) that thing has so many things I don’t know how these people (referring to local authority law enforcers) expect us to remember and comply with all these laws”*

#### 4.4 Training and Relationship between section 126 of the Act and health management practices

A total of 21 (18.1%) of the proprietors had been trained on the contents of section 126 of the Public Health Act while 95 (81.9 %) had not been trained on the act as evident in figure 4.2 below

**Figure 4.2 Training and Relationship between section 126 of the Act and health management practices**



The results on training are emphasized by the following caption from a focus group discussion with proprietors. Respondent one understands while two does not understand.

Caption1: *“I once attended a training conference in 2013 at the Namachanja high school. I learned about section 126, especially the structural requirements of public food places”*

Caption 2: *I have never been trained on section 126, but my workers have been to college, I believe they learned about it”*

#### **4.5. Extent of compliance with the provisions of section 126 of public health act**

The extent of compliance with the provisions of section 126 of Cap 242 is illustrated in table 4.5 below. The total possible score during the inspection process was 5 based on a likert scale. The mean compliance for certificate of fitness was (3.1), wells, tanks and cisterns (2.9), stoves, cooking apparatus and chimney (2.1), construction, repair of dilapidated buildings and escape routes for occupants (2.2) and erection of movable objects, excavations and projections (2.3). In addition, the mean compliance for sewerage system is (2.2), removal of refuse on an hourly basis (2.6), regulating sanitary conveniences (2.1), ventilation and dimension of rooms (2.9) and lighting (2.9).

**Table 4.4 Extent of compliance with the provisions of section 126 of cap 242**

<b>Provisions of section 126</b>	<b>Mean Compliance (SD)</b>
<b>Certificate of fitness</b> <ol style="list-style-type: none"> <li>1. Relevant to the size of the business- 3.1</li> <li>2. The certificate is publicly displayed-2.9</li> <li>3. The certificate bears the name of the facility-3.3</li> <li>4. The certificate is current/renewed-3.3</li> <li>5. The due fees has been paid-2.9</li> </ol>	3.1 (0.97)
<b>Wells, tanks and cisterns</b> <ol style="list-style-type: none"> <li>1. Diameter of the opening for tanks-3.0</li> <li>2. Frequency of cleaning/ emptying-2.8</li> <li>3. Appropriate of construction materials- 3.1</li> <li>4. Access hatch/ air vent/ fill port available-2.8</li> <li>5. Does withdrawal pipe have a screen-2.9</li> </ol>	2.9 (1.02)
<b>Stoves, cooking apparatus and chimney</b> <ol style="list-style-type: none"> <li>1. Cooking apparatus is smoke and soot free-2.6</li> <li>2. Presence of a chimney that extends 25 meters above the roof- 1.5</li> <li>3. Easy to operate ignition knob for cooking apparatus – 2.4</li> <li>4. Cooking areas at least 1 m from each other-2.1</li> <li>5. Location of cooking apparatus should not be near windows-2.1</li> </ol>	2.1 (0.96)
<b>Construction, repair of dilapidated buildings and escape routes for occupants</b> <ol style="list-style-type: none"> <li>1. Periodical cleansing-1.9</li> <li>2. Periodical whitewashing- 2.5</li> <li>3. Clearly marked escape routes- 1.4</li> <li>4. Directions for reaching the fire escape-3.0</li> <li>5. One fire escape for every 20 people- 2.2</li> </ol>	2.2 (1.4)
<b>Erection of movable objects, excavations and projections</b> <ol style="list-style-type: none"> <li>1. Permit/license issued- 3.3</li> <li>2. Public notification of movable objects/ excavation – 1.3</li> <li>3. Separation/ designation of excavation area-2.3</li> <li>4. Nuisance avoidance-2.5</li> <li>5. Suitability/ conformity-2.1</li> </ol>	2.3 (1.39)
<b>Sewerage system</b> <ol style="list-style-type: none"> <li>1. Holding tank- 2.6</li> <li>2. Permit for holding tank- 1.8</li> <li>3. Restrictions of constructions-1.8</li> </ol>	2.2 (1.5)

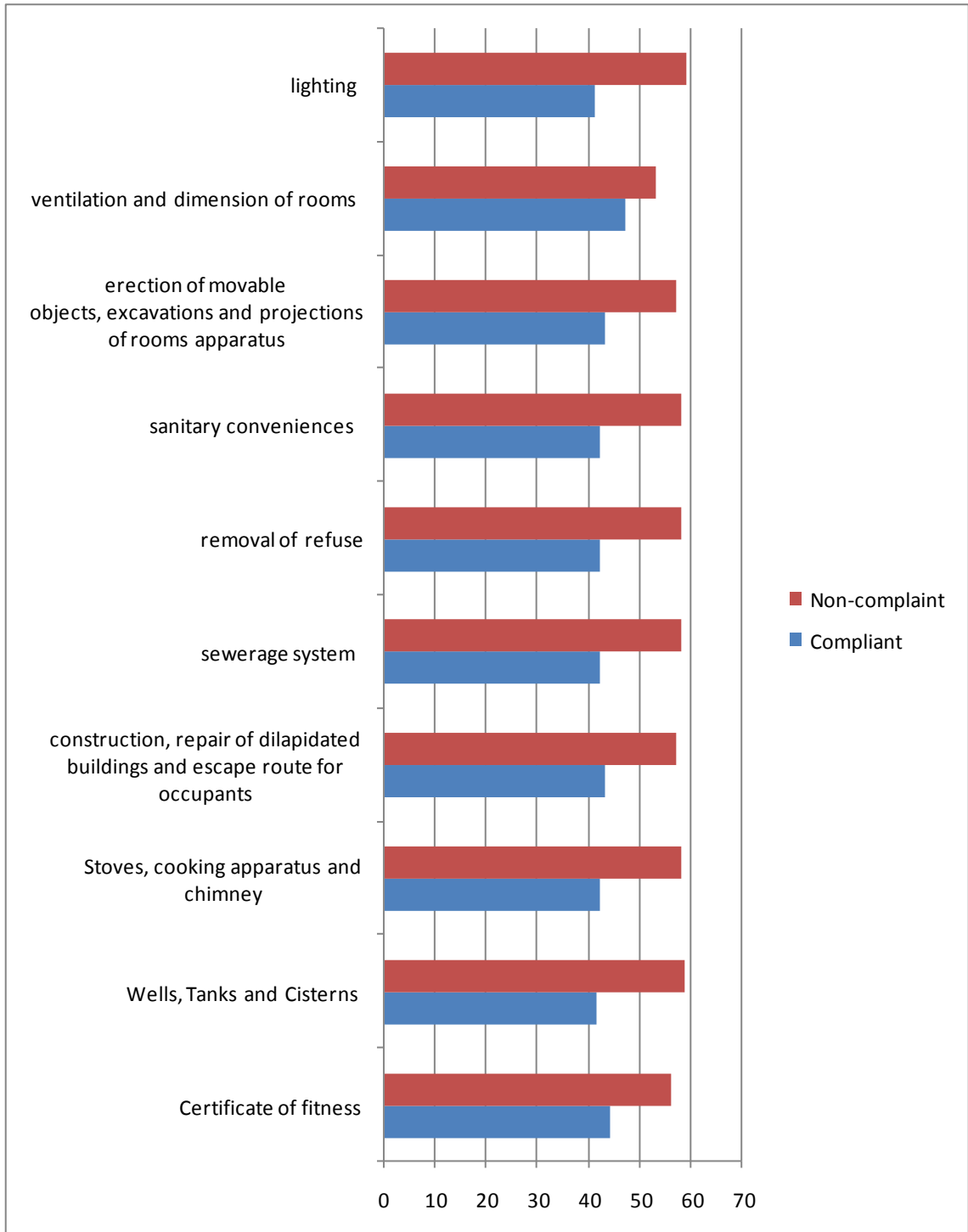
<ul style="list-style-type: none"> <li>4. Restrictions on maintenance- 2.2</li> <li>5. Certificate for sewerage system-2.6</li> </ul>	
<p>Removal of refusal on an hourly basis</p> <ul style="list-style-type: none"> <li>1. Reduction of waste- 3.0</li> <li>2. Covering areas of deposit-2.6</li> <li>3. Categorization of waste- 2.2</li> <li>4. Maintenance of waste collection equipment-2.6</li> </ul> <p>Protective clothing-2.6</p>	2.6 (0.8)
<p>Regulating sanitary conveniences</p> <ul style="list-style-type: none"> <li>1. Frequency of disinfection and cleaning-2.4</li> <li>2. Accessibility based on location – 1.8</li> <li>3. Availability of accessories such as tissue paper-2.5</li> <li>4. Warning signs available during the cleaning process-2.1</li> <li>5. Cleaning while wearing the right gear-1.7</li> </ul>	2.1 (0.6)
<p>Ventilation and dimension of rooms</p> <ul style="list-style-type: none"> <li>1. Ventilation of space that is not naturally ventilated -2.9</li> <li>2. Naturally ventilated space is left open-3.1</li> <li>3. Proportionate window's size to the floor- 2.2</li> <li>4. Proportionate distance of window from floor-3.6</li> <li>5. Control ventilation for areas with air economizer-2.7</li> </ul>	2.9 (1.4)
<p>Lighting</p> <ul style="list-style-type: none"> <li>1. Proportionate location of windows- 2.2</li> <li>2. Proportionate size of windows-3.6</li> <li>3. Availability of emergency lighting-2.7</li> <li>4. Bulb/sq ft –artificial lighting-3.1</li> <li>5. Natural lighting should be left open- 2.9</li> </ul>	2.9 (1.8)
<b>Average Compliance</b>	<b>2.53</b>

#### **4.6 Public food places that are compliant to each provisions of section 126 of cap 242**

It is necessary to present the proportion of respondents who are fully compliant to the provisions of section 126 of public health act. Public food places that are fully compliant have a score of five out of a possible five based on the likert scale while the non-compliant public food places have a score of between four and one. A total of 51 (44%) had a score of five meaning they are fully compliant with provisions on certificate of fitness while 65 (56 %) are not fully compliant. A total of 48 (41.4 %) had a score of 5 meaning that they are fully compliant with the provisions on wells, tanks and cisterns while 68 (58. 6%) are not fully compliant. A total of 49 (42%) were fully compliant with stoves, cooking apparatus and chimney while 67 (58 %) were not fully compliant.

A total of 50 (43.10%) were fully compliant with the provision of construction, repair of dilapidated buildings and escape route for occupants while 66 (56. 9%) are not fully compliant. A total of 49 (42.2%) were compliant with the provision of sewerage system while 67 (57.8%) are not fully compliant. A total of 49 (42%) were fully compliant with the provisions on removal of refuse while 67 (58%) are not fully compliant. A total of 49 (42%) were fully compliant with provisions of sanitary conveniences while 67 (58%) are not fully compliant. A total of 50 (43%) were compliant with erection of movable objects, excavations and projections of rooms apparatus while 66 (57 %) are not fully compliant. A total of 54 (47%) were compliant with the provisions of ventilation and dimension of rooms while 62 (53%) are not fully compliant. A total of 48 (41%) respondents were fully compliant with the provisions on lighting while 68 (59%) are not fully compliant.

**Figure 4.3 Public food places compliant to each provisions of section 126 of cap 242**



#### 4.6. Factors that influence compliance with section 126 of public health act

##### 4.6.1 Relationship with law enforcers as evident during the Inspection process

The bivariate analysis on the relationship between law enforcers and food proprietors is evident in table 4.5 below. It indicates that it affected the extent of compliance. The chi-square statistic is 16.4583 while the P value is 0.00054.

**Table 4.5 Relationship with law enforcers during inspection and compliance**

<b>Relationship with law enforcers during inspection</b>	<b>Compliant</b>	<b>Non-Compliant</b>	<b>Total</b>
<b>Factor is significant</b>	21 (28%) (31.36)	53 (72%) (42.84)	74 (100%)
<b>Factor is not significant</b>	29 (69%) (16.84)	13 (31%) (23.16)	42 (100%)
<b>Total</b>	50 (43%)	66 (57%)	116 (100%)

**$X^2= 16.3022$ .  $DF=1$  The P value is 0.00054**

The contact between law enforcers and proprietors during inspection is significant as captured in a KII with enforcers:

*“There is fear between hoteliers and law enforcers. It appears that the level of distrust is beyond repair. Some enforcers are after bribes while some owners readily issue it. As such, it becomes difficult to enhance compliance”*

#### 4.6.2 Revenue and compliance

The bivariate analysis on resources as evident in table 4.6 below indicates that revenue from the public food place affected the extent of compliance. The chi-square statistic is 16.4583 while the p value is 0.00051.

**Table 4.6 Revenue and compliance**

<b>Revenue</b>	<b>Compliant</b>	<b>Non-Compliant</b>	<b>Total</b>
<b>Factor is significant</b>	41 (56%) (30.74)	32 (44%) (42.26)	73 (100%)
<b>Factor is not significant</b>	9 (21%) (17.26)	34 (79%) (23.74)	43 (100%)
<b>Total</b>	50 (43%)	66 (57%)	116 (100%)

$$X^2 = 16.4583 \text{ DF} = 1 \text{ P value} = 0.00051$$

The significance of resources is captured in the FGD caption below

*“It is not my role to safeguard the health of the public by following the laws of sanitation and buildings. Am I supposed to spend money to put up systems that are not even inspected?”*

The significant of resources is captured in the KII below

*“Some of the public food places are rural very hard to reach with the minimum resources provided. I would visit some of these far away public food places and miss the proprietors”.*

### 4.6.3 Bribery and Compliance

The bivariate analysis on corruption as evident in table 4.7 below indicates that it affected the extent of compliance. The P value is 0.009091. This result is significant at  $p < 0.05$ .

**Table 4.7 Bribery and compliance**

<b>Bribery=116</b>	<b>Compliant</b>	<b>Non-Compliant</b>	<b>Total</b>
<b>Factor is significant</b>	21 (32 %) (27.79)	45 (68%) (38.21)	66 (100%)
<b>Factor is not significant</b>	29 (58%) (20.21)	21 (42%) (27.79)	50 (100%)
<b>Total</b>	50 (43%)	66 (57%)	116 (100%)

$$X^2=6.8048 \text{ DF}=1 \text{ P value is } 0.009091$$

The significance of corruption is captured in the KII captions below

Caption 1:

*“I have been persuaded to leave offenders without prosecution. I remember a time when a Muslim hotel owner cried and begged after I issued a notice. I refused any kind of coercion, and she followed me to the house and office. I am ashamed that I forgave her and she refused to leave without thanking me”*

Caption 2:

*“Aaah, my friend, this thing is common (referring to receiving bribes) and they are willing to give out (referring to hotel owners) sometimes you don’t even ask, they know what they should do, they just give...and yeah, I know it makes compliance difficult”*

#### 4.6.4 Awareness and Compliance

The bivariate analysis on awareness as evident in table 4.8 below indicates that the level of awareness affected the extent of compliance. The chi-square statistics is 10.5815 while P value is 0.001142. This result is significant at  $p < 0.05$ .

**Table 4.8 Awareness and Compliance**

Awareness	Compliant	Non-Compliant	Total
<b>Factor is significant</b>	18 (29%) (26.53)	45 (71%) (36.47)	63 (100%)
<b>Factor is not significant</b>	32 (60%) (21.47)	21 (40%) (29.53)	53(100%)
<b>Total</b>	50(42%)	66 (58%)	116 (100%)

**$X^2=10.5815$  DF=1 The P value is 0.001142**

During the focus group discussion, one of the indicators that awareness played a significant role is captured in the statement

*“I don’t think hotels have anything to do with the public health Act. It is not the role of food enterprises to protect the general population by adhering to laws. It should be left to the authorities.”*

#### **4.7. The predictors of compliance**

Table 4.9, table 4.9.1 and 4.9.2 present the association of socio-demographic characteristics of respondents, characteristics and practices within the public food places with the level of compliance. Operating from a rural environment, being female, operating a small business, number of customers, number of employees in the business and making less income were associated with non-compliance ( $p < 0.01$ ) to the provisions of section 126 of the public health. However, training, type of business, time of existence did not contribute to non-compliance.

**Table 4.9 Association of socio-demographic variables and compliance level**

Variables	Mean Compliance	SD (95 ci)	Test	t/f statistic	df	Coef.	P value
<b>Area</b>							
Rural	2.1	0.92 (1.8-26)	t-test	-7.9	114	-	0.0001
Urban	3.7	0.74 (3.5-3.8)					
<b>Gender</b>							
Male	3.8	0.7 (3.6-4.0)	t-test	5.2	114	-	0.0001
Female	2.9	1.0 (2.7-3.2)					
Age		(-.02-0.1)	Linear Regression			-0.01	0.4100
<b>Education</b>							
Primary	2.4	1.1	ANOVA	13.9	F(2,113)	-	0.0001
Secondary	3.6	0.9					
College/university	3.6	0.7					
<b>Marital status</b>							
Single	3.7	0.7	ANOVA	17.9	F(4,111)	-	0.0001
Married	3.7	0.8					
Divorced	2.8	0.8					
Widowed	3.6	0.5					
Cohabiting	1.9	0.8					
<b>Religion</b>							
Christian	3.3	1.1	ANOVA	1.6	F(2,113)	-	0.1923
Muslim	3.8	0.8					
Hindu	3.4	0.6					

**Table 4. 9. 1 Association of characteristics within public food place and compliance level**

Variables	Mean compliance	SD (95 ci)	Test	t/f statistic	df	Coef.	P value
<b>Experience</b>							
<5 years	3.5	1.2	ANOVA	1.2	F (2, 113)	-	0.3083
5-10 years	3.2	0.9					
>10 years	3.5	0.8					
<b>Training on public health act</b>							
Yes	3.6	0.8 (3.3-4.0)	t-test	1.6	114	-	0.1132
No	3.3	1.0 (3.1-3.5)					
<b>Business type (N=113)</b>							
Café	3.1	1.1	ANOVA	3.8	F (3,112)	-	0.0121
Restaurant	3.7	0.8					
Bar and Restaurant	3.4	0.9					
Fast Food	3.6	0.7					
<b>Revenue Earned</b>		SD (4.1-8.4)					
<20, 000	2.8	1.4	ANOVA	14.6	F (3, 112)	-	0.0001
20,000-50, 000	2.6	0.9					
≥50, 000 - <100000	3.5	0.8					
≥100000	4.0	0.6					
<b>Years of existence</b>							
<5 years	3.1	1.0	ANOVA	2.7	F(2, 113)	-	0.0693
5-10 years	3.6	0.9					
≥10 years	3.3	0.9					
Number of customers per day	-	(0.002 - 0.006)	Linear regression	4	F (1,115)	0.005	0.001
Number of employees	-	(0.01-0.5)	Linear regression	3.6	F (1,115)	0.03	0.001

**Table 4. 9. 2 Association of practices/events and compliance level**

	Mean compliance	SD (95 ci)	Test	t/f statistic	df	Co ef.	P Value
Penalized for non-compliance							
Yes	3.1	0.18 (2.7-3.5)	t-test	-1.3	114	-	0.1989
No	3.4	0.1 (3.2-3.6)					
Arrested for non-compliance							
Yes	2.9	0.2 (2.5-3.9)	t-test	-1.9	114	-	0.620
No	3.4	0.1 (3.2-3.6)					
Issued Bribe							
Yes	3.3	0.13 (3.0-3.6)	t-test	-0.52	114	-	0.6048
No	3.4	0.11 (3.1-3.6)					
Has undergone inspection							
Yes	3.8	0.6 (3.6-3.9)	t-test	9.9	105	-	0.0001
No	2.3	0.8 (1.9-2.5)					
Disease complain							
Diarrhea	3.4	1.1	ANOVA	2.8	F (2, 113)	-	0.0001
Typhoid	2.8	1.0					
Diarrhea and typhoid	2.9	0.8					
No complain	3.0	0.6					

In order to enhance the importance of inspection, a statement from KII is captured below:

*You know, sometimes I wonder how we are expected to conduct inspection and arrest these people for noncompliance...there are no vehicles, and the few that are available are out of service or have no fuel, we are not empowered my friend. Sometimes you want to do something, but you're limited, you tell me, if you're the one, what you can do, nothing!"*

## **4.9. Discussion**

The discussion presents the research results based on the objectives and hypothesis of the study. Little is known about the level of compliance with Public Health Act (Cap 242) and its effect on health management across the country because few studies have been conducted on the topic. It is important to note that there is a salient increase in the burden of disease in the country due to a variety of factors. Consequently, the current study investigated compliance with the provisions of section 126 of the Public Health Act (cap 242) by public food places in Bungoma County, Kenya

### **4.9. 1 Extent of compliance with the provisions of section 126 of cap 242 in the Public Health Act**

Some of the provisions in Section 126 of the Public Health Act include appropriate lighting, ventilation, disposal of refuse and conducting disinfection of facilities, provisions about wells and cisterns and sanitary conveniences. Other provisions include providing permit for the erection of movable objects, escape routes for occupants in case of an emergency, stoves and cooking apparatus need to conform to law. This study found out that majority of the public food places in the County was not compliant with the provisions. For example, the average mean compliance for the county was barely half-way the mark at 2.53. In addition, the number of hotels that were non-compliant to each of the provisions exceeded the compliant ones. For example, 44% have a score of five based on the likert scale meaning they are fully compliant with provisions on certificate of fitness while 56% are not fully compliant. A total 41.4 % have a score of five meaning that they are fully compliant with the provisions on well, tanks and cisterns

while 58.6% are not fully compliant. This means that majority of the hotels are non-compliant and the standards within the county are low. Yapp and Fairman (2004) found similar results when he stated that 45 per cent of all businesses inspected in 2000 were found to have breached some food regulations in some way. These findings are different from a study conducted by Kuo Nae-Wen et al (2008) that targeted hotels in Taiwan. The average compliance out of a possible five was 3.1. The findings mean that in order to meet CAP 242 regulations, especially section 126, it is necessary to achieve the following: comfortable and appropriate balance of gases (ventilation), optimum temperature, adequate humidity, movement or flow of air, free from disease producing microorganisms in the business premise, erecting movable objects in a desired manner and maintaining sanitary conveniences. These important areas can improve the hygiene conditions of the public food places.

#### **4.9.2 Factors influencing compliance with section 126 of the Public Health Act in public food places**

The study showed that the factors influencing compliance included revenue, awareness, and relationship with enforcers during inspection. Some these factors are controllable while others are not within the control of the business. Some factors are internal to the organization while some are external.

Awareness showed a statistically significant association with compliance as evident in the p value 0.001142. It is also clear that over two-thirds (77.58%) of the total respondents were aware of the existence of section 126 of the Public Health Act such as

proper lighting, ventilation and waste management. Yapp and Fairman (2006) in their study found that close to two-thirds (62%) percent of proprietors in SMEs demonstrated a lack of knowledge throughout the compliance decision process (Yapp and Fairman 2006). In that particular study, Yapp and Fairman (2006) showed that staff knowledge also prevented compliance, with owners blaming their own staff for the issues of noncompliance. Part of this arose from an inadequate knowledge of the food safety requirements and principles. In addition, over-familiarity with a situation led to non-compliance.

The study discovered that bribery does not have a significant relationship with compliance as evident in the p value of 0.009091. However, the culture of bribery as a means of avoiding prosecution was evident during the interviews. The law enforcers were quick to admit that they indeed receive bribes from proprietors when threaten to arrest them or close their business premises for noncompliance. The practice seemed very rampant and seen as a normal way of doing things. Corruption is indeed a major hindrance towards enforcing the cap 242 bylaws among proprietors. Callahan and Jennings (2002) indicate that failure to conform to public health ethics is responsible for the rampant corruption. This culture of corruption is a menace that should be dealt with both at the national and county levels. It should take the efforts and personal responsibility of both proprietors and the law enforcers. The result means that the vice requires urgent attention by both the local authorities and proprietors. The results mirror Yapp and Fairman (2004) because it was discovered that outstanding factors affecting compliance with food safety legislation within SMEs. The study showed that complex,

underlying issues prevented compliance with regulatory requirements. These barriers included the lack of trust in food safety legislation and bribery.

Revenue is a significant factor that affects compliance as evident in the p value is 0.00051 Dolan and Humphrey (2004) affirms this ideology by indicating that finances play a crucial role in the compliance process. In addition, the law enforcers indicate that insufficient resources such as vehicles for conducting inspections and tools to measure compliance affected their efforts to enforce compliance with section 126 of the Public Health Act. It means that there is a need to provide to provide law enforcers with the necessary materials and resources to allow them to do the necessary inspections and audits to enterprises operating both in the rural and urban areas of Bungoma County. Inaccessibility of the hotel enterprises was also mentioned as a major hindrance towards compliance with the provisions of the public health act.

The relationship between law enforcers and proprietors based on inspection is a significant factor that affects compliance as evident in the p value of 0.00054. Law enforcers would visit some of these far away public food places and miss the proprietors leading to poor relations. Sometimes the public food places proprietors would close their premises and go into hiding once word goes around that there is an intended inspection by the local authority law. The proprietors do this to avoid arrest due to non-compliances. This makes it hard for the law enforcers to arrest or enforce laws among the public food places in rural areas. Perhaps setting up a satellite local enforcer in rural areas would enhance compliance. However, Hutter and Amodu found different results

by indicating that better regulation calls for fewer occasions of inspection and more advice (Hutter and Amodu, 2008). However, a study conducted in a city in Lebanon disagrees with such findings. According to Massoud et al (2010), the food industry and businesses are generally more concerned with safety and quality rather than administrative and environmental issues. The study indicated that lack of government support, stakeholder demand and the fact that ISO 14001 is not a legal requirement constitutes the most salient factors hindering enforcement of law. Economical and organizational factors are the most significant incentives required to motivate the food industry to adopt laws. However, the study defines the foundations for developing strategies, policy reforms and incentive schemes to reduce the barriers of enforcing laws meaning that it proposes relationships (Donherty, 2004)

#### **4.9.3 Relationship among socio-demographic characteristics, public food places characteristics and compliance levels**

The predictors of non-compliance examine various issues that make it difficult for public food places to adhere to laws. Statistical evidence indicates that earning less income was directly related to non-compliance. A one way anova test showed that the amount of income the business makes is a very strong predictor of compliance (F statistic=14.5,  $p=0.0001$ ), with those making less than Kshs 50,000 per month registering very low levels of compliance with the provisions of section 126 of the public health act. Yapp and Fairman (2004) concur with the results because 20% of small and medium food enterprises' financial return determines their food safety compliance, particularly in terms of investment in structure, equipment and staff training. Yapp and Fairman (2004)

notes that the reluctance to spend money is caused by failure to commit to food safety objectives within the regulatory requirements. These findings are different from what was reported in this study where respondents felt that lack of enough money played a large part in non-compliance.

Another factor that was closely related to insufficient resources and a strong predictor of non-compliance was the size of the business. Those operating smaller businesses (café, fast food) had lower levels of compliance as compared to their counterparts who operated larger businesses (restaurants and bar and restaurants). This was statistically significant ( $F$  statistic=3.8,  $p=0.0121$ ). This phenomenon could be explained by the fact that bigger public food places operated within the urban areas where city inspections are regular. The bigger public food places were making higher incomes that were associated with high levels of compliance. Steiner, Butler and American Planning Association (2007) concur with the results when they indicated that low revenue flow also restricts staffing provision, meaning that small business do not have the personnel or time available to monitor changing legal requirements, interpret and implement necessary controls. Large businesses have higher cash flows that allow them to employ staff to deal with regulatory issues. As a result, they are likely to improve compliance with the regulations. Similar findings of such issues hindering compliance were reported in other empirical studies in the areas of occupational health and safety.

It was interesting to find out that the gender of the business owner was a strong indicator to non-compliance with section 126 of the public health act. An independent t-test

indicated that on average, there indeed was a statistically significant difference in the mean compliance level between male and females with female gender being less compliant than the male gender ( $p=0.0001$ ). Equally important, a one-way anova test also revealed that those with less education (primary level) were less compliant as compared to their counterparts who schooled up-to secondary and college/university ( $F$  statistic =13.9,  $p=0.0001$ ). The phenomenon is explained by the fact that those who were well schooled had a better understanding of the requirements of the Public Health Act and the provisions therein. Hui and Cross (2011) concur with the results by indicating that food enterprises are required to hire qualified staff that has capacity to ensure the quality levels that pertain to food production are implemented (Hui and Cross, 2011).

In contrast, only a very small number (18%) reported to have ever been trained on the contents of the Public Health Act and the bylaws therein. This shows that most of what they knew about the Public Health Act was acquired through their own personal initiative of reading the Public Health Act or from other sources that may not be entirely true. In this study, training was not directly related to poor compliance ( $p=0.1132$ ) to the regulations of the public act. However, training can greatly increase the level of compliance with section 126 of the Public Health Act. In order for proprietors to comply and adhere to the various provisions of cap 242, they must first understand the laws and their effects on the public food places. In order for them to fully know and understand them, they need to go through the training process. There is an urgent need for local authorities to increase awareness and knowledge of the Public Health Act proprietors through training. Okelo and Swinton (2005), Sharma, Teret and Brownell (2010) and

Yach et al., (2012) found that training, especially on the marketing process and laws enhance compliance.

The number of arrests due to non-compliance was not common with only 13.8% reporting to ever having been arrested at any one time due to non-compliance. All the arrests were made in public food places operating in urban areas. This reinforces the point that inspection procedure focuses on public food places operating in urban areas and forgetting the rural enterprises operating in rural set-ups. Ifenkwe (2012) concurs when he indicates that most food facilities in rural areas are likely to fail when subjected to inspection. It is evident in the study that law enforcers do not have enough resources such as vehicles to move to interior places to perform inspections. The public food places operating from rural areas are small or medium enterprises and tend to be overlooked. This should not be the case because the issues that affect the small public food places have important implications for both food safety and environmental policies. Nelson and De Bruijn (2005) concur with the results by indicating that numerous public food places in the rural areas operated outside the formal government system of regulation. It means that the food places lacked certificate of fitness and licenses. The informal nature of operations makes it simple to make profits. They occasionally issue bribes in order to continue operating (Nelson and De Bruijn, 2005).

Bribery upon arrest for non-compliance was a common practice among public food places enterprises with 6 (5.7%) reporting to have given a bribe on average Kshs 6, 208 ( $\pm 7,949$ ). Some paid bribes up to a maximum of Kshs. 40,000. Issuing bribes can

negatively hinder the implementation of the provisions of section 126 of Cap 242. Many public food places owners who responded to the questionnaires felt that corruption was a major factor that played a role in compliance. It is important for local authorities to devise ways to curb corruption, improve compliance and good practices among public food places business in this area. The study conducted by Nelson and De Bruijn indicate that bribery in selected sites in Tanzania was caused by formalization, which is the voluntary transaction between operators and government. It focuses on mutual benefits and reduces the risk of damaging fragile enterprises and livelihoods for little benefit. Bribery is an easier route to maintain the status quo (Jaffe and Masakure, 2005).

The incidences of food borne diseases in a premise highlight the hygiene status. In this study, 49.11% of customers visiting these public food places enterprises also complained to the management of suffering from diarrhea and typhoid. In addition, the incidence of food borne illnesses reported in a premise showed a statically significant relationship with compliance  $<0.001$ . The conditions highlights the importance of improving the standards of food handling practices among public food places in Bungoma County to prevent food borne diseases among customers, the staff and the community at large. Ewen et al (2007) concur by indicating that food workers in many settings have been responsible for food borne disease outbreaks for decades, and there is no indication that this is diminishing. It is evident that 816 reports with 80,682 cases were collected from events that occurred from 1927 until the first quarter of 2006. A total of 14 agents caused outbreaks: norovirus or probable norovirus (338), *Salmonella enterica* (151), hepatitis A virus (84), *Staphylococcus aureus* (53), *Shigella* spp. (33), *Streptococcus*

Lancefield groups A and G (17), and parasites *Cyclospora*, *Giardia*, and *Cryptosporidium* (23) (Ewen et al., 2007).

In this study, only 35 (30.17%) of the respondents indicated that they had not been inspected by officials of the local authority while 81 (69.83%) reported to have been inspected by the local authority. Inspection is a crucial process that enhances the health standards within a food enterprise because it allows the owners/supervisors to monitor their compliance with the provisions in the law. The study found out that inspection determined the level of compliance with the provisions in section 126 of Cap 242. However, Cruz, Katz and Suarez (2001) found different results because cases and controls did not differ by overall inspection outcome or mean number of critical violations. Only one critical violation--evidence of vermin--was associated with outbreaks. It means that inspection did not affect compliance of vermin related laws.

Other factors that were suspected, as predictors of non-compliance were insufficient resources, experience in the food industry, age, years of existence of the business enterprise among others. These factors did not show any statistically significant relationship with non-compliance.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.0 Summary of the Findings**

#### **5.1 Study findings**

The results of the study revealed that the average level of compliance with section 126 of the Public Health Act (Cap 242) was 2.53. Some of the public food places complied with specific sections while not complying with others. The factors that influence the ability of the public food places to comply with the provisions of section 126 of the Public Health Act include revenue, awareness, bribery and relationship with enforcers based on the inspection process. The ability of law enforcers to implement the Public Health Act is dependent on the availability of resources and collaboration with the relevant stakeholders. It appeared that several law enforcers were aware of the existence of the public health act, especially the provisions of section 126. The study findings also revealed that the size, revenue, location, income, number of employees and customers in a public food place determines the compliance levels.

#### **5.2 Implications of the findings**

The findings of the study point out the gap between enforcement of public health laws and health management approaches. It appears that the public food places proprietors, law enforcers and government fail to understand the correlation between law/policy and health management. Indeed, there is a need for the government, public food places and law enforcers to understand that Public Health Act (Cap 242) sets the stage for health management.

### **5.3 Conclusion**

Based on the results of the study, the following conclusions were drawn

1. The average compliance in Bungoma County was average (2.53) out of a possible score of five. Many public food places were not compliant with each provision of section 126.
2. The factors that influence compliance with section 126 of Public Health Act include resources, awareness, corruption and contact with relationship with enforcers during inspection.
3. Operating from a rural environment, gender, operating a small business and making less income showed a statistically significant association with non-compliance with the provisions of section 126 of the Public Health Act ( $p < 0.01$ ).

### **5.4 Recommendations**

1. The Ministry of Health at national and county level should boost extent of compliance with section 126 of the Public Health Act by public food places in Bungoma County, Kenya by simplifying the provisions of section 126 of The Public Health Act so that all stakeholders can understand. The simplification works together with health literacy, which is a relatively new concept in health promotion. It is a composite term that describes a range of outcomes to health education and communication activities.
2. The county government should embrace measures to enhance the proprietors' ability to complying with section 126 of the Public Health Act. The factors that limit compliance include awareness, bribery, poor relationship with enforcers during

inspection and revenue. Revenue was a significant factor that determined compliance meaning that proprietors should be motivated using financial (money) and non-financial incentives (garbage bags, horse pipes, white washing materials, protective mechanisms and cooking apparatus), especially when they record a low compliance average of <5. Bribery should be eliminated through adopting anti-corruption mechanism that are both reactionary and preventive such as eliminating direct contact between law enforcers and proprietors. Including mandatory training and refresher courses is likely to enhance awareness levels.

3. The Ministry of Health at national and county level should adapt cooperative enforcement strategies otherwise known as co-regulation by involving other stakeholders such as customers, non-governmental organizations and interest groups. The stakeholders influence the practices and events within public food places such as inspection process, revenue, arrest and education available to the proprietors.

### **5.5 Areas for further research**

1. There is a need for sustained local research on the relationship between various sections of Public Health Act such as section 127, section 128, section 129, section 130, section 131, section 132 and section 133 and their impact on compliance levels in the county. The various sections of the act work together and influence human health.

2. Investigations should determine whether factors that influence compliance such as revenue, awareness, bribery and inspection could be controlled through adopting simpler specification standards that require modest vigilance by both law enforcers and proprietors of public food places.
  
3. Many stakeholders determine the extent of compliance because they influence the practices and events within public food places. Consequently, further research should focus on the role of other stakeholders such as the private sector, consumers, and non-governmental organizations in enhancing compliance.

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## **APPENDICES**

### **Appendix A: Consent Form**

My name is Chalton Ogweno; I am a Masters student from Kenyatta University conducting a research on Compliance with the provisions of section 126 of the public health act (cap 242) by public food places in Bungoma County, Kenya. The information will be used by the Ministry of Health to enhance compliance with law in Bungoma County and other regions of Kenya.

#### **Procedures to be followed**

Participation in this study will require that I ask you some questions and determine whether you comply to the provision in the public health Act. I will record the information from you in a questionnaire.

You have the right to refuse participation in this study. You will get the same care and medical treatment whether you agree to join the study or not and your decision will not change the care you will receive from the clinic today or that you will get from any other clinic at any other time.

Please remember that participation in the study is voluntary. You may ask questions related to the study at any time.

You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you receive from this clinic or any other organization now or in the future.

#### **Discomforts and risks**

The questions asked will be simple and unlikely to cause discomfort to you. However, your participation will be confidential especially when addressing law enforcer's attitude.

#### **Benefits**

This study will help government and non-government organizations to determine the full extent of disease. You will also help in influencing the attitude and perception of hotel owners as they adhere to section 126 of Public Health Act (Cap 242). You will also help appeal to the government through recommendations to place appropriate health administration strategies at the forefront thus attaining better health standards nationwide.



**Appendix B: Study Questionnaire for Proprietors of Public Food Places**  
**COMPLIANCE WITH THE PROVISIONS OF SECTION 126 OF THE PUBLIC**  
**HEALTH ACT (CAP 242) BY PUBLIC FOOD PLACES IN BUNGOMA**  
**COUNTY, KENYA**

**Respondent code:.....Date:** \_\_\_/\_\_\_/\_\_\_ **Time:** \_\_\_:\_\_\_  
AM PM  
*dd mmm yyyy*

<b>Outcome:</b>	1.Completed	2. Declined	3. Other (mention)
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Please circle the correct answer or state where necessary.

**PART I – BACKGROUND INFORMATION**

This section of the questionnaire refers to background or biographical information. Although we are aware of the sensitivity of the questions in this section, the information will allow us to compare groups of respondents. Once again, we assure you that your response will remain anonymous. Your co-operation is appreciated.

**Q1. Gender.**

1. Male	1
2. Female	2

**Q2. Age (In complete years)** \_\_\_\_\_

**Q3. Marital status.**

1. Single/never married	1
2. Married	2
3. Divorced/separated	3
4. Widowed	4
5. Cohabiting	5

**Q4. Ethnic origin**

1. Black African	1
2. White	2
3. Indian/ Asian	3

4. Other (Specify)	
--------------------	--

**Q5.** What is your religious affiliation?

1. Christian	1
2. Muslim	2
3. Hindu	3
4. Other (Specify)	

**Q6.** What is your highest level of education?

1. Primary	1
2. Secondary	2
3. College/university	3
4. None	4

**Q7.** If you have schooled upto College, what kind of course did you take?

1. Related to hotel	1
2. Not related to hotel	2

**Q8.** Employment: Do you have other formal employment apart from this business?

1. Yes	1
2. No	2

**Q9.** If no to Q8. above, please indicate below.

1. This business is my only business	1
2. I have this and other businesses elsewhere	2

**Q10.** How many years have you worked in the industry? \_\_\_\_\_ (years)

**Q11.** Type of business: What type of business do you operate?

1. Café	1
2. Restaurant	2

3. Bar and restaurant	3
4. Fast food	4
5. Other (Specify)	

**Q12.** Business location: what is the exact location of your business?

Location \_\_\_\_\_ Sub-location \_\_\_\_\_  
 \_\_\_\_\_ Township \_\_\_\_\_

**Q13.** How would you describe the area in which your business is operating?

1. Rural	1
2. Urban	2

**Q14.** Are you the owner of this business?

1. Yes, I'm the owner	1
2. No, I'm a manager/supervisor	2
3. Other, (specify)	

**Q15.** For how long has this business been in existence?

Years \_\_\_\_\_ Months \_\_\_\_\_

**Q16.** How many employees does this business have? \_\_\_\_\_

**Q17.** What is the average number of customers the business serves in a day?  
 \_\_\_\_\_

**Q20.** On average, how much money does the business collect in a month (Total revenue including profits)? Kshs: \_\_\_\_\_

## **PART II: AWARENESS AND PRACTICE**

---

**Q21.** Do you know that there is a Kenyan public health act?

1. Yes	1
2. No	2

**Q22.** If yes to Q21, do you know the bylaws in section 126 of the public health act?

1. Yes	1
2. No	2

**Q23.** If yes to question Q22 above, which components of the section 126 of the public health act can you remember?

1.
2.
3.

**Q24.** Are you aware that the public health act sets the stage for policy formulation within the health sector?

1. Yes	1
2. No	2

**Q25.** Have you ever been trained on the public health act?

1. Yes	1
2. No	2

**Q26.** If yes to question Q25 above, when was the last training done?

1. within the last six months	1
2. within the last one year	2
3. more than one year ago	3
4. I cannot remember.	4

**Q27.** If yes to question Q26 above, how often do you get refresher trainings?

\_\_\_\_\_

**Q28.** Have you ever been arrested for not complying with any bylaw of the public health act?

1. Yes	1
2. No	2

**Q29.** Have you ever been penalized for not complying with any bylaw of the public health act?

1. Yes	1
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2. No	2
-------	---

**Q30.** If yes to question Q29 above, how much penalty did you pay?

1. Kshs: (specify)	
2. I cannot remember.	2

**Q31.** If yes to question Q29 above, did paying this penalty make you comply with the section you were penalized for?

1. Yes, it did	1
2. No, it did not	2
3. I don't know	3

**Q32.** Have you ever given a bribe to the local authorities after being arrested for non-compliance with any section of the public health act?

1. Yes	1
2. No	2

**Q33.** If yes to Q32 above, what is the maximum amount of bribe you have ever given?  
Kshs: \_\_\_\_\_

**Q 34.** Have you in the last one-year received complaints from customers to have suffered from the following?

1. Diarrhea	1
2. Typhoid	2
3. Diarrhea and typhoid	3
4. Other, Specify	

### **PART III): FACTORS INFLUENCING COMPLIANCE**

---

How do the outlined factors affect compliance with section 126 of Cap 242?

1. Factor is not significant
2. Factor is significant

	LEVELS OF AGREEMENT	
	1	2
<b>VARIOUS COMPONENTS</b>	Factor is not significant	Factor is significant
<b>Q 35.</b> Is your relationship with law enforcers during inspection a significant factor in complying with section 126 of Cap 242?	1	2
<b>Q 36.</b> Is your level of awareness concerning the provisions of section 126 of Public Health Act a significant factor in complying with it?	1	2
<b>Q 37:</b> Is bribery a significant factor in complying with section 126 of Cap 242?	1	2
<b>Q 38:</b> is revenue a significant factor in complying with section 126 of Cap 242?	1	2

Please enter any other views or comments towards compliance with the public health act by public food places

1.
2.

.....the end.....

Thank you for your co-operation in completing this questionnaire. Kindly return the questionnaire as specified in the cover letter.

### Appendix C: Inspection Checklist

The provisions of section 126 of by CAP 242 were inspected on a likert scale of 1-5 based on the following levels.

1. The facility meets a negligible part of the requirements
2. The facility meets less than half of the requirements
3. The facility meets half of the requirements
4. The facility meets more than half of the requirements
5. The facility meets all the requirements

VARIOUS COMPONENTS	EXTENT OF COMPLIANCE				
	1	2	3	4	5
Certificate of fitness <ol style="list-style-type: none"> <li>1. Relevant to the size of the business</li> <li>2. The certificate is publicly displayed</li> <li>3. The certificate bears the name of the facility</li> <li>4. The certificate is current/renewed</li> <li>5. The due fees has been paid</li> </ol>	1	2	3	4	5
Wells, tanks and cisterns <ol style="list-style-type: none"> <li>1. Diameter of the opening</li> <li>2. Frequency of cleaning/ emptying</li> <li>3. Appropriate of construction materials</li> <li>4. Access hatch/ air vent/ fill port available</li> <li>5. Does withdrawal pipe have a screen</li> </ol>	1	2	3	4	5
Stoves, cooking apparatus and chimney <ol style="list-style-type: none"> <li>1. Cooking apparatus is smoke and soot free</li> <li>2. Presence of a chimney that extends 25 meters above the roof</li> <li>3. Easy to operate ignition knob for cooking apparatus</li> <li>4. Cooking areas at least 1 m from each other</li> <li>5. Location of cooking apparatus should not be near windows</li> </ol>	1	2	3	4	5
Construction, repair of dilapidated buildings and escape routes for occupants <ol style="list-style-type: none"> <li>1. Periodical cleansing</li> <li>2. Periodical whitewashing</li> <li>3. Clearly marked escape routes</li> <li>4. Directions for reaching the fire escape</li> <li>5. One fire escape for every 20 people</li> </ol>	1	2	3	4	5
Erection of movable objects, excavations and projections <ol style="list-style-type: none"> <li>1. Permit/license issued-</li> <li>2. Public notification of movable objects/ excavation</li> <li>3. Separation/ designation of excavation area</li> </ol>	1	2	3	4	5

4. Nuisance avoidance 5. Suitability/ conformity					
<b>Sewerage system</b> 1. Holding tank 2. Permit for holding tank 3. Restrictions of constructions 4. Restrictions on maintenance 5. Certificate for sewerage system	1	2	3	4	5
<b>Removal of refusal on an hourly basis</b> 1. Reduction of waste 2. Covering areas of deposit 3. Categorization of waste 4. Maintenance of waste collection equipment 5. Protective clothing	1	2	3	4	5
<b>Regulating sanitary conveniences</b> 1. Frequency of disinfection and cleaning 2. Accessibility based on location 3. Availability of accessories such as tissue paper 4. Warning signs available during the cleaning process 5. Cleaning while wearing the right gear	1	2	3	4	5
<b>Ventilation and dimension of rooms</b> 1. Ventilation of space that is not naturally ventilated 2. Naturally ventilated space is left open 3. Proportionate window's size to the floor 4. Proportionate distance of window from floor 5. Control ventilation for areas with air economizer	1	2	3	4	5
<b>Lighting</b> 1. Proportionate location of windows 2. Proportionate size of windows 3. Availability of emergency lighting 4. Bulb/sq ft –artificial lighting 5. Natural lighting should be left open	1	2	3	4	5

### Appendix D: Focused Group Discussion Guide

<b>FOCUS GROUP DISCUSSION GUIDE FOR THE PROPRIETORS OF PUBLIC FOOD PLACES</b>		
<p>Good morning/ afternoon/ day. My name is .....we are conducting a research on COMPLIANCE WITH THE PROVISIONS OF SECTION 126 OF THE PUBLIC HEALTH ACT (CAP 242) BY PUBLIC FOOD PLACES IN BUNGOMA COUNTY, KENYA. We would like to be interested to know how compliance can be improved. Please be assured that this discussion is strictly confidential. Also, you are not obliged to answer any question and you may withdraw at any time.</p>		
Name of participants  Address  Sub county  Location  Division  Date:		
1. Discussion on level of familiarity with section 126 of public health act		
2. Discussion on the role enterprise owners play in addressing the health challenges facing the county		
3. Discussion on the role of section 126 of public health act in addressing health concerns		

### Appendix E: Key Informant Interview Guide

<b>INTERVIEW GUIDE FOR THE PUBLIC HEALTH OFFICERS</b>		
<p>Good morning/ afternoon/ day. My name is .....we are conducting a research on COMPLIANCE WITH THE PROVISIONS OF SECTION 126 OF THE PUBLIC HEALTH ACT (CAP 242) BY PUBLIC FOOD PLACES IN BUNGOMA COUNTY, KENYA. We would like to be interested to know how compliance can be improved. Please be assured that this discussion is strictly confidential. Also, you are not obliged to answer any question and you may withdraw at any time.</p>		
Name:  Address:  Sub county:  Location:  Date:  Cadre of staff interviewed		
1. Please, talk briefly about your understanding of Cap 242 Section 126.		
2. Are you familiar with your role in the health management process within the County		
3. What are the major hindrances towards compliance?		

Appendix F: Map of Bungoma County



## Appendix G: Kenyatta University ethics approval letter



KENYATTA UNIVERSITY  
ETHICS REVIEW COMMITTEE

Fax: 8711242/8711575  
Email: kuerc.chairman@ku.ac.ke  
kuerc.secretary@ku.ac.ke  
Website: www.ku.ac.ke

P. O. Box 43844  
Nairobi, 00100  
Tel: 8710901/12  
Tel: 8710901/12

Our Ref: KU/R/COMM/51/253

Date: 11<sup>th</sup> November, 2013

Chalton Obura Ogweni,  
Kenyatta University,  
P.O. Box 43844 00100-Nairobi

Dear Mr. Obura,

APPLICATION NUMBER PKU/132/I 116 OF 2013 – “COMPLIANCE TO PUBLIC HEALTH ACT BY HOTEL ENTERPRISES AND ITS EFFECTS ON HEALTH MANAGEMENT PRACTICES IN BUNGOMA COUNTY, KENYA” - Version 2

**1. IDENTIFICATION OF PROTOCOL**

The application before the committee is with a research topic “Compliance to public health act by hotel enterprises and its effects on health management practices in Bungoma County, Kenya” dated 8<sup>th</sup> November, 2013.


**2. DECISION**

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 11<sup>th</sup> November, 2013.

**3. ADVICE/CONDITIONS**

- i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
- ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.
- iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
- iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above

  
**PROF. NICHOLAS K. GIKONYO**  
 CHAIRMAN ETHICS REVIEW COMMITTEE



I Chalton Ogweni Obura accept the advice given and will fulfill the conditions therein.

Signature Gruel Dated this day of 8<sup>th</sup> November 2013.  
 cc. Vice-Chancellor  
 Director: Institute for Research Science and Technology

## Appendix H: National Council for Science and Technology Permit



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349, 310571, 2219420  
Fax: +254-20-318245, 318249  
Email: secretary@nacosti.go.ke  
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When replying please quote

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

Ref. No.

Date:

26<sup>th</sup> November, 2013

NACOSTI/P/13/7582/397

Chalton Ogweno Obura  
Kenyatta University  
P.O.Box 43844-00100  
NAIROBI.

#### RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Compliance to public health act by hotel enterprises and its effects on health management practices in Bungoma County, Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Bungoma County** for a period ending **15<sup>th</sup> April, 2014**.

You are advised to report to **the County Commissioner and the County Director of Education, Bungoma 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.

*Said Hussein*  
SAID HUSSEIN  
FOR: SECRETARY/CEO  
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Copy to:

The County Commissioner  
The County Director of Education  
Bungoma County.