

# The Effect of Catering Policies on Food Safety at National Youth Service Catering Units in Gilgil, Nakuru County, Kenya

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## Abstract

Food safety is a practice that preserves the quality of food to prevent contamination that can lead to food-borne illnesses. Food safety is a globally endorsed training-aspect issue within the hospitality industry. The purpose of this study was to determine the effects of catering policies on food safety at the National Youth Catering Units in Gilgil, Nakuru County, Kenya. The study adopted a descriptive survey research design comprising of mixed research methodology. The target population in this study consisted of 121 employees in NYS catering department. Census method was used in determining the study population since the population was low and thus could be reached entirely. Data was collected using a structured questionnaire, an observation checklist and an interview guide and then analyzed using descriptive and inferential statistics. Quantitative data was, coded and processed by use of the statistical package for social sciences (SPSS) and presented into percentage tables and graphs. Inferential statistics included the regression analysis, correlation analysis and analysis of variance. The study revealed that there are written and well regarded food safety policies and procedure in the work areas of staff that give detailed guidance for practices, but management falls short of providing adequate and timely information about current food safety rules and regulations. The study also concludes that even though to some extent the management of the catering department at NYS catering units do not take risks when it comes to food safety and thus are cautious, not all necessary information for handling food safely is readily available to the staff. In addition, though the management provides safe food to customers and makes efforts to ensure safe food handling is practiced as its top priority the catering department has a shortfall in providing adequate training to the staff in order to improve employees' food safety practices, even though the staff are aware it is important. Nonetheless, most of the staff makes efforts to follow and practice food safety rules due to awareness of their importance rather than fear of legal prosecution. The catering units also encourage teamwork between new and old employees as a measure of enhancing food safety. However, there lacked good cooperation among departments to ensure that consumers receive safely prepared food. Overall, the staff views indicated that food safety policies and procedures help to ensure that safe food handling practices are followed. The study recommends that management should strive to always providing adequate and timely information about current food safety rules and regulations and should also offer more in-service training for the staff. The management should also encourage partnership and collaboration between different departments in order to enhance safe food production. This study is of benefit to educational managers, food handlers, students, privately and public owned learning or training institution and public corporations. The findings could inform the Government on areas of improvements to enhance food safety practices in public institutions, thus putting measures where necessary. This study has documented empirical findings for reference by researchers, academicians and policy makers.

**Keywords:** Catering Policies, Food Safety

## 1.0 Introduction

Throughout history, human existence has been dependent on food. However, how we get our food done or produced has changed dramatically over the years. Our concern and knowledge about food-borne disease has changed dramatically too with probably less concern on safety of consumed foods products (Yiannas, 2008). Food business has become the order of the day with stages of production; processing and distribution of food becoming critical. These steps should adhere to control and procedures that satisfy relevant hygiene requirements laid down in the regulations that enhance food safety upon consumption. Food poisoning is a challenge and measures need to be taken and continually improved to avert this problem and hence this study. Food-borne diseases and surveillance systems are a major issue in African Countries where food is a major factor in transmission of diarrheal diseases. Most African countries lack or have weak surveillance system thus investigation of food-borne disease causative factors and magnitude of exposure are inadequate (WHO, 2012). There is significant under-reporting of food-borne illness, evinced by lack of well- analyzed and documented

data that is usable during risk analysis, hence wrong decision-making. In Kenya, management of infectious diarrheal is under public health sector, while food safety is associated with regulatory agencies under different ministries (Wagacha & Muthomi, 2008). According to Fone, (2013), the specific practices are not endeared, thus the reason for there being so much experiences of food contaminations both internationally and locally, and to be specific in learning institutions here in Kenya. The number of incidences or occurrences with regard to food safety mentioned or reported in learning institutions suggests the reason as to why this study was carried out.

## 2.0 Literature Review

Food safety has been defined as conditions and measures that are necessary during production, processing, storage, distribution and preparation of food to ensure that it is safe, sound, and wholesome and fit for human consumption (WHO, 2012). Food handlers neglecting the basic rule of food preparation such as mishandling and taking for granted hygiene practice contribute to the outbreaks of food poisoning (Yiannas, 2008). Food can transmit diseases from person to person as well as serve as a growth medium for bacteria that can cause food poisoning. In developed countries there are intricate standards for food preparation, whereas in less developed countries the main issue is simply the availability of adequate safe water, which is usually a critical item (WHO, 2010). According to Tansey and Worsley (2014) food safety is a scientific discipline describing handling, preparation, storage and presentation of food in ways that prevent food borne illness. This includes a number of routines that should be followed to avoid potentially severe health hazards. The tracks within this line of thought are safety between industry and the market and then between the market and the consumer (Shravani, 2012). Considering industry to market practices, food safety considerations include the origins of food including the practices relating to food labelling, food hygiene, food additives and pesticide residues, as well as policies on biotechnology, food guidelines for the management of governmental import and export inspections and certification systems for foods. Considering market to consumer practices, the usual thought is that food ought to be safe in the market and the concern is safe delivery and preparation of the food for the consumer (Yiannas, 2008). The core knowledge of food handlers may come from the root of the problem. Graduates that are trained on food hygiene and sanitation play a major role in determining the level of awareness among food handlers in the industry.

Contamination of produce with harmful microorganisms can occur at all stages of production, processing, transportation, storage, preparation, and service. To prevent food borne illness, fresh produce needs to be handled with care at each step from farm to table (Al Yousuf, Taylor, & Taylor, 2015). However, it will be prudent for any practitioner on food production to work with lot of caution while purchasing and receiving food commodities by use of purchasing specifications that include food safety requirements, such as maintaining produce at the proper temperature, maintaining clean and pest-free storage areas and delivery vehicles, and complying with food safety laws and regulations. More so to ensure suppliers are getting produce from licensed, reputable sources and check storage and handling practices of vendors are adhered to. There should also be established procedures for inspecting, accepting or rejecting incoming deliveries. These procedures should include checking the condition of fresh produce and the transportation vehicles to make sure specifications are met (Cramer, 2013). Thorough washing should be practiced for all fresh products and more so the equipment and tools. Produce should be washed before serving or cutting and this should be done on running water. Chemical disinfectant should also be used according to the manufacturer's label instructions for recommended concentration and contact time (Tansey & Worsley, 2014). It should be noted that fresh produce should not be soaked or stored in standing water, while packaged produce labelled "ready-to-eat," "washed," or "triple washed" should never be rewashed. Never the less, all equipment, utensils, and food contact surfaces that come into contact with cut produce should be washed thoroughly with hot soapy water (Rinse, sanitize, and air-dry before use) (Cramer, 2013).

### 2.1 Effects of Catering Policies on Food Safety

In a broader perspective, food-safety action plan draws the line for minimum expected standards and the overall objectives of food safety system of a country (Nguz, 2007). Systems and guidelines should be put in place to enhance food safety by all food handlers (Yiannas, Food Safety Culture, 2009). It identifies the approach the nation uses and the goals/targets the system aims to achieve. In Kenya, the nationwide food quality and safety systems are legally controlled by various government agencies under different ministries (WHO, 2010). Food-safety regulation agencies work under the Ministries of Trade, Industrialization, Public Health and Sanitation, Livestock, Fisheries and Agriculture. Such agencies include the Kenya Bureau of Standards (KEBS), Kenya Agricultural Research Institute (KARI), Department of Public Health (DPH) and Kenya Plant Health Inspectorate Services (KEPHIS) among others (Nguz, 2007). These agencies aim at disseminating information on the code of hygiene necessary to all food handlers. This is followed by supervision and implementation of the mentioned practices. Food safety is dependent upon the significant roles played by food handlers along the food service system. Food handlers may introduce pathogenic microbes to the food during the process of preparation,

distribution and serving (Yiannas, Food Safety Culture, 2009). This is through inoculation of the food with infected excreta, pus, exhalations and other body discharges.

According to Huuhtanen and Laukkanen (2006) all food handlers should understand and internalize that personal hygiene begins at home, with the essential elements for good hygiene being a clean body, clean hair and clean clothing. Hair in food can be a source of both microbiological and physical contamination. Hairnets and beard covers should be worn to assure food product integrity. According to Hennessey (2012), long-sleeved smocks should be worn to cover arm hair. More so, clean uniforms, aprons and other outer garments that are put on after the employee gets to work can help minimize food contamination. While working, clothing should be kept reasonably clean and in good repair. Removal of smocks, lab coats or aprons should take place when leaving the work area to go to the employee break room, restroom or exiting the building. The only jewellery allowed in a food plant is a plain wedding band and/or one small post earring in each ear and no other jewellery should be worn because it may fall into the product, it can present a safety hazard and it cannot be adequately sanitized against bacterial transmission. Jewellery should be removed prior to entering the processing facility.

Food safety does not happen by accident. To prepare safe food, you must follow certain steps and procedures throughout the entire food preparation process. You have to think, and you have to pay attention to how you prepare food to make sure it is safe. You do this by developing a food safety plan. A good food safety plan will make sure that anything that might make someone sick is under control (Foskett & Ceserani, 2007). To achieve this, there should be clear structures, rules and procedures on workers hygiene that touch on dress code and covering, health requirements of workers and routines, stipulated procedures or manual on food storage, refrigeration, leftover foods, cleanliness and serving temperatures should be put in place (WHO, 2010). Food safety practice requires application of the best policies with the best management and communication systems, including compelling, rapid, relevant, reliable and repeated messages to all food handlers in an organization (Powell, Jacob, & Chapman, 2011). However, management should serve as role models for good work habits and acceptable hygienic practices policies. They should continually emphasize how important it is. Policies should reassure the employees that they will not lose their jobs if they report an illness or a communicable disease (Shravani, 2012). Once employees understand what is expected of them, effective supervision of employee practices should be used to ensure that employees follow proper procedures. Training should be conducted annually and reviewed whenever incorrect practices are observed (Yiannas, 2009).

### *2.2 State of Food Policies in Kenya*

Kenya is deficient of a distinct and published policy on food safety. However, separate laws have been put in place to safeguard the consumers. The primary food safety laws are the Food, Drugs and Chemical Substances Act, Chapter 254; The Public Health Act, Chapter 242 and The Meat Control Act, Cap 356 (GOK., 2007). The law mandates the minister for Public Health and Sanitation to orchestrate all the activities by the various agencies concerned in food safety management through the Department of Public Health (DPH).

## **3.0 Study Methodology**

The following section describes the methodology used to conduct the study.

### *3.1 Research Design*

The study adopted a descriptive survey research design comprising mixed research methodology. Creswell and Plano Clark (2011) describes mixed methods research as a methodology for conducting research that involves collecting, analyzing and integrating quantitative and qualitative research. According to Mugenda and Mugenda (2012) quantitative data includes close-ended information such as that found to measure attitudes, behaviours and performance instruments. The analysis of this type of data consists of statistically analyzing scores collected on instruments such as questionnaires or checklists to answer research questions. Qualitative data consists of open-ended structured questions information, Interview Checklist that the researcher usually gathers through interviews, focus groups and observations. The quantitative and qualitative approaches in combination provide a better understanding of research problems than either approaches alone (Creswell & Plano Clark, 2011). Both qualitative and quantitative data collection were done concurrently in this present research. This was supported by use of tools that allowed both qualitative responses and quantitative responses that could be analyzed using descriptive statistics that included a self-administered questionnaire and an interview guide

### *3.2 Study Population*

Target population is that population to which the researcher wants to generalize the results of study on (Mugenda & Mugenda, 2012). This study adopted a census method. Cochran, (2007) describes census approach as the use of the entire population. The cost considerations make census impossible for large populations, hence only attractive for small population of 200 or less. The entire population for this study was 121 and thus the entire population was studied. This was made up of 105Cooks (cooks and assistants), 6 storekeepers 6

Cateress/Messing officers and 4 Management officials that included chief messing officer, assistant chief messing officer, chief ratio officer, NYS health officer).

### *3.3 Research Instruments*

The study used structured questionnaire, observation checklist and interview guide as instruments of data collection. A questionnaire was developed for the Messing/Catering Officer, Cooks, Assistant cooks, Storekeepers. On the other hand, an interview guide was developed for NYS Health Officer, Chief Messing Officer, Assistant Messing Officer and Chief Ratio Officer.

## **4.0 Discussion of Findings**

The following section presents the findings and discussions from the study. Out of 121-targeted respondents, 93 filled and returned the questionnaires. The response rate was 76.9 %. According to Best and Khan (2006) a response rate of 50% is considered adequate, 60% good and above 70% very good. Therefore, in view of this, the response rate of 76.9% was considered very good and exceeded the threshold postulated by Best and Khan.

### *4.1 Descriptive Statistics*

Majority of the respondents agreed that whether there are written food safety policies and procedure with a mean value was 1.27 and a standard deviation of 0.446. This implies that majority of the respondents' responded that they have written food safety policies and procedure in their areas of work. Majority of the respondents disagreed with a mean value of 3.44 and a standard deviation of 0.949 that management provides adequate and timely information about current food safety rules and regulations. This implies that management falls short of providing adequate and timely information about current food safety rules and regulations. The study further revealed that majority of the respondents agreed with a mean value of 3.47 and standard deviation of 0.880 that their food safety policies and procedures gave detailed guidance for practices. This implies that majority of the respondents' food safety policies and procedures gave detailed guidance for practices. The study further showed that, majority disagreed that written food safety policies and procedures are nothing more than a cover-up in case there is a lawsuit, with a mean value of 2.56 and standard deviation of 1.347. The study showed that majority of the respondents disagreed that all of the necessary information for handling food safely is readily available to them with a mean value of 3.44 and a standard deviation of 1.137. This implies majority of respondents were not of the view that necessary information for handling food safely is readily available to them. Majority of the respondents disagreed that management provides adequate training to improve employees' food safety with a mean value of 3.24 and a standard deviation of 1.042. This implies the catering department has a short fall in providing adequate training to the staff to improve employees' food safety practices. In addition, majority of the respondents agreed that the management will not take even a small risk when it comes to food safety while a good number disagreed with a mean value of 3.25 and a standard deviation of 1.373. This implies that to some extent the management of the catering department at NYS catering units do not take risks when it comes to food safety and thus they are cautious. Majority of the respondents disagreed that managers' actions showed providing safe food to customers is a top priority with a mean value of 3.72 and a standard deviation of 1.297. Majority of the respondents agreed with a mean value of 3.75 and a standard deviation of 1.046 that their manager is actively involved in making sure safe food handling is practiced. This implies that majority of the respondents' managers are actively involved in making sure safe food handling is practiced. The study revealed that majority of the respondents agreed that they follow and practice food safety rules because they know they are important while a reasonable number were not sure with a mean value of 3.35 and a standard deviation of 1.196. This implies majority of the respondents follow and practice food safety rules due to awareness of their importance. Majority of the respondents agreed that new employees and experienced employees work together to ensure food safety practices are in place while a good number disagreed with a mean value of 3.52 and a standard deviation of 0.904. This implies that majority of the respondents agreed that there is teamwork between new and old employees as a measure of enhancing food safety. The study also revealed that majority of the respondents agreed with a mean value of 3.55 and standard deviation of 1.079 that food safety training/education provided by management is useful in improving their practices. This implies that training/education on food safety provided by management is useful in improving their practices. Majority of the respondents disagreed that there is good cooperation among departments to ensure that consumers receive prepared food safely while a significant number agreed with a mean value of 3.55 and a standard deviation of 1.048. Furthermore, the study revealed that majority of the respondents disagreed with a mean value of 3.82 and a standard deviation of 1.142 that their food safety policies and procedures help to ensure that safe food handling practices are followed. This implies that majority of respondents responded were not of the view that food safety policies and procedures help to ensure that safe food handling practices are followed. The results are presented in Table 1 below.

Table 1: Descriptive Statistics on Effect of Catering Policies on Food Safety

Food Catering Policies	N	Mean	Standard Deviation
Are there written food safety policies and procedure in your work area	93	1.27	0.446
Management provides adequate and timely information about current food safety rules and regulations	93	3.44	0.949
Food safety policies and procedures give detailed guidance for practices	93	3.47	0.880
Views that written food safety policies and procedures are nothing more than a cover-up against potential lawsuit	93	2.56	1.347
Availability of all necessary information for handling food safely to Respondents	93	3.44	1.137
Management provides adequate training to improve employees' food safety practices	93	3.24	1.042
Management will not take even a small risk when it comes to food safety	93	3.25	1.373
Managers' actions show that providing safe food to customers is a top priority	93	3.72	1.297
Managers actively ensure practicing of safe food handling	93	3.72	1.046
Respondents follow and practice food safety rules because they know they are important	93	3.35	1.196
New employees and experienced employees work together to ensure food safety practices	93	3.52	0.904
Food safety training/education provided by management improves practices	93	3.55	1.079
Cooperation among Departments to Ensure Safe Food Preparation	93	3.55	1.048
Food safety policies and procedures help to ensure Adherence to safe food handling practices	93	3.82	1.142

#### 4.2 Inferential statistics

The study obtained inferential statistics between food catering policies and food safety and presented the results. The R value was 0.624 which indicates a strong correlation. The R<sup>2</sup> value that indicated how much of the dependent variable (food safety), could be explained by the independent variable (Catering policies) showed that food handling practices could be explained by, 38.9% of variance in food safety. This is shown in Table 2 below.

Table2: Model Summary of effects of Catering Policies on Food Safety

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.624 <sup>a</sup>	.389	.275	.310

a. Predictors: (Constant), Effects of Catering Policies

ANOVA results in Table 3 below indicate that the regression model predicts the outcome variable significantly. This indicates the statistical significance of the regression model that was applied. An F statistic of 3.409 indicated that the model was significant. This was supported by a probability value of 0.000. This is below 0.05, and indicates that on overall, the model applied can statistically significantly predict the outcome variable. The overall model was statistically significant (F=3.409, P<0.05).

Table 3: Analysis of Variance of Food Catering Policies on Food Safety

Model 1		Sum of Squares	df	Mean Square	F	Sig.
	Regression	4.597	14	.328	3.409	.000 <sup>b</sup>
	Residual	7.225	75	.096		
	Total	11.822	89			

a. Dependent Variable: Food Safety in NYS

b. Predictors: (Constant), Effects of Catering Policies

#### 4.3 Coefficients of Food Catering Practices on Food Safety

The study analyzed the strength of the relationship between effects of catering policies and food poisoning in NYS. The results are presented in Table 4.

Table 4: Coefficients of Food Catering Practices on Food Safety

Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	1.353	.270		5.008	.000
Effects of Catering Policies	.147	.045	.422	3.244	.002

a. Dependent Variable: Food safety in NYS

Table 4 shows beta coefficient of catering food policies. The beta coefficient ( $B= 1.47, p<0.05$ ) which was positive and significant. Both the constant and catering policies contribute significantly to the model. The regression equation is presented as follows;

(Y) Food safety =  $1.353+0.147$  (Catering Policies). The model implies that for every unit change in c food safety increases by 0.147. This can be explained that catering policies have a great effect on food safety also availability of written food safety policies and procedure in their areas of work.

## 5.0 Conclusion

The study concluded that there are written and well regarded food safety policies and procedure in the work areas of staff that gave detailed guidance for practices, but management falls short of providing adequate and timely information about current food safety rules and regulations. The study also concluded that even though to some extent the management of the catering department at NYS catering units do not take risks when it comes to food safety and thus are cautious, not all necessary information for handling food safely were readily available to the staff. In addition, though the management had provided safe food to customers and made efforts to ensure safe food handling was practiced as its top priority the catering department has a shortfall in providing adequate training to the staff in order to improve employees' food safety practices, even though the staff are aware it is important. Nonetheless, most of the staff made efforts to follow and practice food safety rules due to awareness of their importance rather than fear of legal prosecution. The catering department also encouraged teamwork between new and old employees as a measure of enhancing food safety. However, there lacked good cooperation among departments to ensure that consumers receive safely prepared food. Overall, the staff views indicated that food safety policies and procedures helped ensure that safe food handling practices were followed.

## 6.0 Recommendation

The study recommends that management should strive to always provide adequate and timely information about current food safety rules and regulations and should offer more in-service training for the staff. The management should also encourage partnership and collaboration between different departments in order to enhance safe food production. The management should also enhance a culture that would make safe food preparation a norm in the catering department.

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