

Impact of Staff Training on Food Safety Management in Quick Service Restaurants in Yenagoa, Bayelsa State

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Abstract

This study on the impact of staff training on food safety management in quick service restaurants in Yenagoa seeks to evaluate the influence of training programs on effective food service delivery within the fast food industry in the study location. The data for this study was gathered from 155 food handlers within the quick service restaurant industry in the study area using a detailed questionnaire. The study revealed that 36 (87.7%) respondent affirmed to have knowledge on the term food safety management. From the study we also discovered that a 100% of the respondents claimed to have undergone food safety management training, out of which 148 (95.5%) respondents claim to have undergone trainings on hygiene. 40 (25.8%) received post training certificates, whereas 102 (65.8%) respondents affirmed to have had a post training assessment carried out. The research also revealed the type of training programs predominant in the study location as 94 (60.6%) of the respondents claimed to have had a combination of both theoretically and practical trainings. The analytical result using ANOVA indicated that there is significant relationship between different forms of staff training and effective food management system among QSR operators in Yenagoa, therefore the null hypothesis was rejected.

Keyboard: Staff Training, Food Safety, Management, Quick Service

Introduction

Every human being need food for survival. Food is a product that is rich in nutrients and required by human beings. They may be sometimes, exposed to contamination with the major sources from water, air, dust, equipment, sewage, insects, rodents and food handlers. A 2022 WHO report shows that around the world, an estimated 600 million i.e. nearly 10% of people become ill after eating contaminated foods, which results in 420,000 deaths and the loss of 33 million health years (DALYs) each year. Food poisoning outbreaks have been documented in a number of food service industries, primarily in hotels and restaurants (Temeche et al, 2016).

Microorganisms that can cause illness can still be found in food due to changes in eating habits, handling, and preparation methods (Odipe et al, 2019) and one of the most important strategies in the prevention of food borne illnesses is teaching food handlers safe food handling techniques (World Health Organization, 2013).

As it is well known, the tradition of dining out, which was formerly restricted to special occasions, has become ingrained in our culture as a result of urban pressures (Ogirima & Feliciab, 2020) and the state of the economy, including metropolitan growth, the distance from work or school, and the long hours that women work outside the home. This presently adds to the large number of eateries that are commercial (Ogirima & Feliciab, 2020). A vital element of sustainable development is food safety (Stedefeldt et al., 2015). The quick service restaurant industry happen to be one of the most thriving industries in Yenagoa Metropolis as it caters to the fast ways of livelihood of its inhabitants and their ever-increasing demand for its services. Food safety refers to the proper procedures for handling foods during food preparation, processing, storage and distribution of the food products one deals with in food business (Hanson, 2021).

The Food Safety and Standards Authority of India (FSSAI, 2006) states that the Food Safety Management System (FSMS) is a collection of components used to direct and control an organization with regard to food safety that interact or relate to each other to establish policy and objectives and to achieve those objectives, as defined by the International Standard Organization (ISO 22003:2022). The key elements of FSMS are; Good Manufacturing Practices, Hazard Analysis and Critical Control Point, Management Element System, Statutory and regulatory requirements, Communication (ISO 22002:2022).

The food security team and other individuals who carry out tasks that affect food safety are required by ISO 22000:2005 to be competent and possess the necessary education, training, experience, and skills. The main tactic employed to teach food handlers how to correctly follow the protocols set forth by the health regulations is training (Medeiros et al., 2011). "Training is known as a medium to transfer knowledge not only in education but also in the working environment" (Omar, N. & Shahril, 2019).

A study by Johnson et al (2023) on food and safety training influence on food service workers knowledge and compliance in Malaysia Food hygiene regulations 2009 showed that there was a positive relationship between safety training and level of food operators's knowledge on Malaysia Food hygiene regulations. Food service personnel play a critical role in ensuring food safety; those who neglect basic personal hygiene procedures, like routine hand washing, run the risk of contaminating food (US FDA, 2006).

A food employee or handler is defined as "anyone working with unpackaged food, food equipment or utensils, or food-contact surfaces" by the Codex Alimentarius (2013). Training should be provided to those working in food operations who handle food either directly or indirectly (Codex, 2013). Food handlers knowledge of dairy products from various company sizes (small, medium, and large) in Turkey was investigated by Karaman et al. (2012). In contrast to businesses that had a voluntary program, he discovered that sites with mandatory training had better results when it came to proper food handling procedures.

Evaluating how food safety training programs affect efficient food safety management is crucial. This study aims to assess the knowledge and influence of food safety trainings on efficient food safety management among food service operators in Yenagoa's quick service restaurants, given the scarcity of research on the topic in this particular study area.

Research Hypothesis

H₀ There is no significant relationship between the different forms of staff training and effective food safety management system among QSR operators in Yenagoa Metropolis.

The Study Location

The study area which is Yenagoa Metropolis is the largest city in Bayelsa state, Nigeria. Yenagoa is the capital of Bayelsa state is one of the eight (8) local government areas in the state. Yenagoa is at the south eastern part of Nigeria at geographical coordinates latitudes 4° 55' and 5° 02' North and longitudes 6° 15' and 6° 25' East of the Greenwich Meridian (Owoh & Evwienure, 2021). Yenagoa experiences two climatic seasons: wet and dry seasons with the wet season being warm and overcast and the dry season being hot and mostly cloudy. Yenagoa is geologically made of sedimentary deposits formations (Eludoyin O.S et al, 2024). The relief of Yenagoa is generally flat. Yenagoa is drained by the Epie creek and Ekoli creek (Owoh & Evwienure, 2021), which are both tributaries of the Nun river. The population of Yenagoa Local Government Area was given at 352,285 at the 2006 census and projected to be at 524,400 in 2022 by the National Population Commission (NPC). Yenagoa metropolis has witnessed an outstanding growth in terms of population size and spatial expansion since its creation. The area is highly congested as it is the major city in the state. The urban growth has fostered some socioeconomic activities like farming, fishing and commerce.

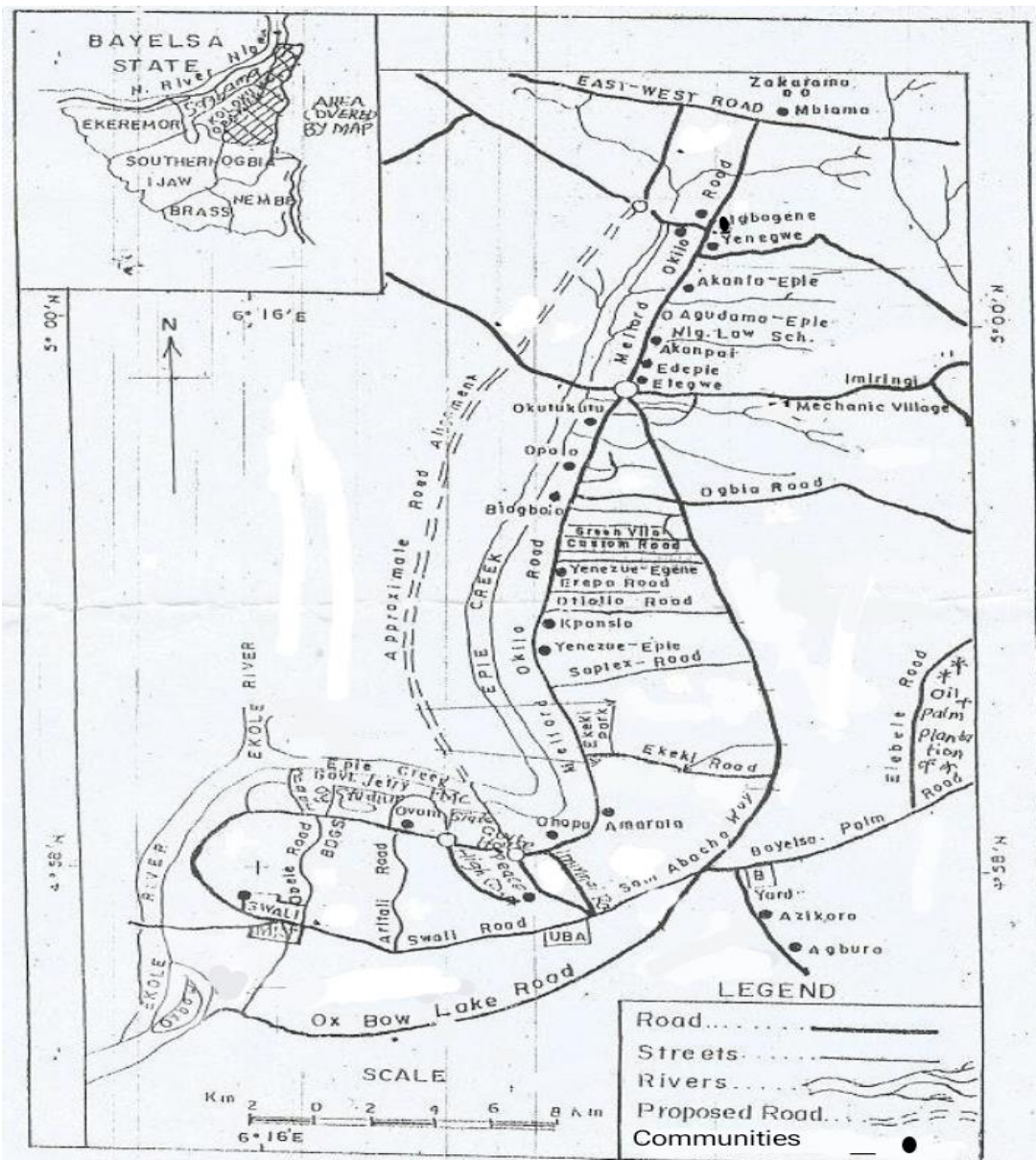


Fig 1.0 Map of Yenagoa Metropolis
 Source: Bariweni and Amukali (2015)

Method of Study

This study analyzes the effect of training in food safety management system amongst quick service restaurants in Yenagoa Metropolis. In order to achieve this, the descriptive survey research design was employed. The method of data collection for the study is the use of questionnaire. The data type required for the study are primary data, gotten from the respondents. A reconnaissance survey was carried out in order to determine the population of the study, the study population consist of the staff of the quick service restaurants operating in Yenagoa Metropolis, which summed up to be about 14 after a preliminary survey by the researcher. The sample size was derived from the total number of staff of all 14 quick service restaurants operating in Yenagoa which summed up to be 362 in number. The Taro Yamane formula was adopted to determine the sample size.

Taro Yamane formula $n = N/(1 + N(e)^2)$

The purposive sampling technique was adopted by the researcher for effective questionnaire distribution. The simple percentage of frequency and charts were used to analyze the data gotten from the respondents. Also, the Analysis of Variance method was used to analyze the hypothesis. The formula for calculating the Anova is $F = MST/MSE$.

A total of 155 questionnaires were administered out of the 190 initially intended. This was due to lack of cooperation on the part of some of the respondents stating that it was against their institution's policy to entertain questionnaires.

Discussion

Table 1. Demographic characteristics of Respondents

Questionnaire Variable	Response Variable	Number of Respondents	Percentage (%)
Age	15-25	80	51.6
	26-35	69	44.5
	36-45	4	2.6
	46-55	2	1.3
	56 and above	0	
Sex	Male	58	37
	Female	97	63
Educational background	Primary	0	0
	Secondary	80	52
	Tertiary	75	48
	No formal education	0	0
	Vocational	0	0
Years of experience	Less than 1 year		32.2
	1-3 years	90	58.1
	4-6 years	9	5.8
	7-10 years	4	2.6
	Above 10 years	2	1.3
Staff strength	1-10	8	5.2
	11-20	21	14
	21-30	64	41.3
	31-40	34	21.9
	41-50	28	18.1
Food handler's job role	Manager/Supervisor	20	12.9
	Cook/Chef	59	38.1
	FOH/Cashier	57	36.8
	Others	19	12.2

From the table above, it showed that out of the 155 respondents, 80 (51.6%) of them fell under the age bracket of 15-25, 69 (44.5%) of them fell under the age bracket of 26-35, 4 (2.6%) persons fell under the age bracket of 36-45 and 2 (1.3%) persons fell under the age bracket of 46-55, out of which 58 (37%) were male and 97 (63%) were female. A total of 80 respondents

(52%) out of the 155 revealed that they they were secondary school graduates and 75 (48%) of them claimed to have graduated from tertiary institution. This statistics goes to show that the minimum educational criterion for employment in a quick service restaurant within Yenagoa Metropolis is a secondary school certification. The table revealed that out of the 155 respondents, 50 (32.3%) of them claim to have less than a year’s experience, 90 (58.1%) of them claim to have between 1-3 years experience, 9 (5.8%) of the respondents claim to have between 4-6 years of experience, 4 (2.6%) of the respondents claim to have 7-10 years of experience and 2 (1.3%) respondents claim to have above 10 years experience. This reveals that the average work experience of most operations staff is between one to two years. According to the table , 8 (5.2%) persons revealed their staff strength to be between 1-10, 21 (13.5%) respondents revealed that their staff strength to between 11-20 staff, 64 (41.3%) respondents revealed their staff strength to lie between 21-30 staff, 34 (21.9%) other respondents revealed their staff strength to be between 31-40 staff. The remaining 28 (18.01%) respondents revealed their staff strength to between 40-50 staff out of which 20 (12.9%) of the respondents work in managerial or supervisory positions, 59 (38.1%) acknowledged to work as a chef or cook, 57 (36.8%) respondents work as front of house staff or cashiers while the remaining 19 (12.2%) respondents claimed to work in other areas of food service operations.

Table 2.0 Food Safety Knowledge and Training Program

Questionnaire Variable	Response Variable	No of Respondent	Percentage (%)
Respondents knowledge of Food safety Management system	Yes	136	87.7
	No	19	12.2
Implementation of Food safety management system	Yes	137	88.4
	No	18	11.6
Effectiveness of FSMS	Yes	155	100
	No	-	-
Do food handlers undergo any training?	Yes	155	100
	No	-	-
What form of training do staff undergo?	Theory	5	3.2
	Practical	56	36.1
	Both theory and practical	94	60.6
Are there any trainings on hygiene?	Yes	148	95.5
	No	2	1.3
	No opinion	5	3.2

Are the trainings on hygiene sufficient?	Yes	148	95.5
	No	7	4.5
Are there any post training assessment?	Yes	102	65.8
	No	53	34.2
Are there any post training certifications?	Yes	40	25.8
	No	115	74.1
Is there a hazard control plan in your establishment?	Yes	133	85.8
	No	9	5.8
	Not sure	13	8.4
Do you use PPEs during food production operations?	Yes	143	92.3
	No	12	7.7
Did you undergo food handlers test?	Yes	146	94.2
	No	9	5.8
Are the trainings challenging?	Yes	19	12.2
	No	136	87.7
Are your trainings reviewed periodically?	Yes	83	53.5
	No	38	24.5
	Not sure	34	21.9

From the table above, 136 (87.7%) respondent claim to have knowledge on the term food safety management system, and 19 (12.2%) of the respondents claimed otherwise, also 137 (88.4%) respondents agree to having implemented food safety management system in their operations and the other 18 (11.6%) respondents had opposing views. A 100% of the respondents claimed to have undergone food safety management training, out of which 148 (95.5) respondents claim to have undergone trainings on hygiene and the remaining 7 (4.5) respondents affirmed not to have undergone hygiene training, 40 (25.8%) received post training certificates, while the remaining 115 (74.1%) did not receive any post training certificates. The table also showed that 5 (3.2%) respondents claimed that their training was theoretical, 56 (36.1%) affirmed that theirs was practical and 94 (60.6%) confirmed theirs were a combination of both theoretical and practical trainings. From the table, it was equally revealed that 148 (95.5%) respondents acknowledged that the food safety and hygiene trainings they received were sufficient while the remaining 7 respondents (1.39%) differed, furthermore, 102 (65.8%) respondents claimed that there are post training assessments carried out, whereas 53 (34.2%) of the respondents differed. The table also revealed that 133 (85.8%) respondents purported to have a hazard

control plan in their establishment, 13 (5.8%) respondents were unsure of a functioning hazard control plan in their establishment and the remaining 9 (8.4%) respondents declined having a a hazard control plan in place in their facility. Out of the 155 respondents 143 (92.3%) of them confirmed their use of PPEs while other 12 (7.7%) respondents declined using PPEs. Personal protective equipment (PPEs) are equipments, clothing worn to minimize or prevent exposure to hazards that cause social workplace injuries and illnesses such as aprons, boots, gloves etc. According to the Ministry of Health (2014) all food handlers should be medically examined bi-annually, such examination shall include blood, urine and stool test including a chest x-ray. The list above indicated that 146 persons (94.2%) out of the 155 respondents confirmed been medically tested, whereas the remaining 9 (5.8%) did not undergo medical testing. Finally, 19 (12.2%) of the responders also indicated that the training programs were challenging and the remaining 136 (87.7%) responders indicated that the trainings were not challenging, correspondingly, 83 (53.5%) responders suggested that the trainings are reviewed periodically, another 38 (24.5%) responders contradictory suggested that their trainings are not periodically reviewed and the remaining 34 (21.9%) respondents hinted that they were not sure if their trainings are reviewd periodically according to the table displayed above.

Table 4 ANOVA Results Between Staff Training and Effective Food Safety Management System

ANOVA

Effective Food Management System

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11487.971	34	337.881	2.271	.005
Within Groups	6844.481	46	148.793		
Total	18332.452	80			

From the result presented on Table 4 above, the analytical outcome shows that there is significant relationship between different forms of staff training and effective food management system among QSR operators in Yenagoa Metropolis, with a significant value of 0.05, there exists a positive relationship between staff training and effective food safety management system. Additionally, this relationship demonstrates statistical significance at $p \leq 0.05$, which is equal to 0.05. Consequently, the null hypothesis previously stated is rejected, indicating a significant relationship between different forms of staff training and effective food safety management system among QSR operators in Yenagoa, Bayelsa state.

Conclusion

The knowledge of food safety management system is not a new concept to food handlers and operators working in quick service restaurants within Yenagoa Metropolis. Majority of the quick service restaurants staff undergo one form or the other of food safety management training with most of them being a combination of both theoretical and practical trainings which are deemed sufficient for them, although after training assessment and certification is not so popular amongst quick service restaurants in the study location. The food safety management training programs are not challenging, however, amongst these restaurants, only a little above average review their training programs periodically.

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