

ASSESSMENT OF FOOD HYGIENE AND SAFETY PRACTICES OF SELECTED FAST FOOD AND CAFETERIA BUSINESS OUTLETS IN AUCHI, EDO STATE.

Shaibu, Achimi Hashim & Braimah, Omoh Jafaru

Department of Hospitality Management,
Auchi Polytechnic, Auchi, Edo State.

Corresponding Author: haribs2010@gmail.com

DOI: <https://doi.org/10.33281/JTHS20129.2021.1.8>

Ononuju, Valentine Ikenna

Department of Hospitality Management,
Federal Polytechnic, Nekede, Imo State

Abstract

Food handlers in fast food and other commercial catering outlets have a significant role to play in ensuring that food prepared and presented for consumption meets the necessary food hygiene regulation and safety requirements. Food hygiene and safety remains a critical issue with outbreaks of food-borne diseases resulting in substantial health hazards and economic losses to the individual consumer, the industry and the national economy. This study examines the level of compliance of fast food/cafeteria outlets to food hygiene and safety regulations. The study also examines operational challenges to hygiene and safety practices, the training need of food handlers, as well as determining specific ways of achieving effective food hygiene and safety practices in the study locations. This study adopted a survey design. Data for the study was collected through a structured Likert-scaled questionnaire, interview and personal observation. Analysis of the data was carried out using descriptive statistic instruments of simple percentage, mean and standard deviation. The results show that the level of compliance amongst staff of studied fast food outlets to hygiene and safety regulations was very low (35%), 2.45 (0.77). The study equally identified poor storage facilities (43%), lack of awareness (38%) 2.25; non-availability of running water as well as poor toilet facilities and waste disposal attitude amongst food handlers (40.1%) 2.44. Periodic vigilance checks of the food outlets by the regulatory authorities, regular training sessions and periodic medical check-ups of the food personnel by management of food outlets are necessary to protect the health of food handlers. The sanitary conditions and storage facilities of the fast-food outlets should be upgraded if the objective of promoting food safety and hygiene in fast food and cafeteria business outlets is to be achieved.

Keywords: Food, hygiene, safety, food-borne, and regulation.

Introduction

Food hygiene and safety remains a critical issue with outbreaks of food-borne illness resulting in substantial health challenges and economic losses to individuals, the food industry and the economy. Poor handling of food plays a significant role in the occurrence of food-borne illnesses, hence improper food handling may be implicated in 97% of all food-borne illnesses that are associated with food-service industries. Although the safety of food served in restaurants and fast-food business outlets in Nigeria has been an

issue of concern, the unhygienic environment where some food-service outlets are located contribute to the transmission of food-borne diseases (Cook, 2016).

Several studies have documented an increasing lack of knowledge related to personal hygiene kitchen and environmental hygiene, the use of clean utensils and storage of food at the correct temperature, lack of knowledge and training amongst food handlers. Thus, the changing trend has increased the importance that food be handled in a sanitary manner (Osagbemi, 2010).

Health experts in Nigeria have stated that a shortage of water may affect the success of any hygiene and safety campaigns. According to WHO/UNICEF (2015) joint monitoring programme for water and sanitation, only 58% per cent of Nigeria's 180 million estimated populations have access to potable water. Food hygiene and safety issues in Africa and Nigeria, in particular, are mostly centred on ill-health sources that are linked to poor hygiene, but food hygiene in homes schools and markets remain an area of concern, with many countries in Africa doing little or- nothing to implement surveillance systems for food-borne disease. Coupled with the aforementioned problems is the fact that symptoms of food-borne illness such as vomiting, diarrhoea, fever and stomach aches are regarded as common diseases; and everyone seems to know the cure and requires only going to the "chemist" to purchase self-prescribed medication.

Obstacles to food hygiene and safety in fast food outlets include a lack of proper monitoring and supervision by food safety officers or environmental health officers (EHO) on the enforcement of food hygiene regulations. Other challenges include poor refuse disposal and lack of functional toilet facilities in most fast-food business outlets. Another area of food hygiene and safety concern is the sources of food commodities and ingredient supply for fast-food business outlets. In Auchi, most of the fast-food business outlets purchase their raw food materials and ingredients from the open market. It was equally observed that most employees of fast-food outlets in Auchi under investigation lack trained and skilled manpower, hence their attitude towards hygiene and safety issues.

Education, training, supervision and monitoring plays an important role in improving the safety and quality of food in fast food business outlets. It is essential to acquire the know-how and skills necessary to understand and manage food safety hazards because education and training efforts are geared towards improving professionalism and empowerment as well as skill acquisition in food hygiene and safety amongst hospitality professionals. Any successful food hygiene and safety programme requires a shared responsibility amongst food handlers and vendors, food manufacturers, government regulatory agencies and the consumers.

In the light of the above, this study aims to investigate: (i) the level of compliance of fast-food outlets to food hygiene and safety regulations; (ii) determine the operational challenges to food hygiene and safety practice in the study outlets; (iii) determine the training needs of food handlers; (iv)

highlight ways of achieving good hygiene and safety practices in fast food business outlets.

Materials and Method

The Study Area

The study area was Auchi, the headquarters of Etsako West Local Government Area of Edo State. Other towns in the Etsako West Local Government area include Ibie, Agbede, Uzairue, Iyamu, Jattu, Jagbe, Aviele and Anwai clan. Auchi is located on latitude 7.07° north and 5.27° east longitude and 164 metres elevation above sea level and has an area of 940km² with a temperature of 23°C, with South/West wind at 5km/h, and 100% humidity during the rainy season. Auchi has a population of about 197,609 as of the 2006 census, which by estimation must have doubled the above estimate by now due to the influx of people into the town. No thanks to the socio-economic activities associated with the Federal Polytechnic located in this ancient town called Auchi; and attracts students and visitors from all over Nigeria (Edun,2011).

Study Population and Sample Size

The study population comprises both technical and non-technical staff of fast food and cafeteria catering outlets located in Auchi and its environment as indicated in table 1 below:

Table 1: Study Population and Sample Size

S/N	Registered Fast Food Outlets	Location	Registration Status	Staff Population	No. of Male	No. of Female	Average Weekly Customers
A	Mr. Biggs	Benin Okene Express Road, Auchi	Registered	60	20	40	1500
B	Glad-Tidings (G.T)	Benin Okene Express Road, Auchi	Registered	50	15	35	1200
C	Valchi	Opposite Uchi Market & Sabo, Auchi	Registered	30	10	20	700
D	Zaris	Igbe Road, Auchi	Registered	15	4	11	500
E	4 Unregistered cafeteria	Eboreime Market, Auchi Polytechnic premises	Not registered	50	10	40	2,400

Source: Field Survey, 2021

From the table above, a total of 205 staff comprising of 59 male and 146 female of named fast food and cafeteria outlets represents the study population. The sample size for the study was determined using a statistical formula for sample size determination for known population (finite) by Maars (2009) as indicated below:

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

N = total number of staff identified
E = level of significance at 95%
1 = constant
n = sample size

$$= \frac{205}{1 + 205(0.005)^2}$$

$$= \frac{205}{1 + 205(0.0025)}$$

$$= \frac{205}{1.5125} = 135.5371$$

$$= 136.$$

The sample size for the study is 136.

Study Method

During the initial visit, consent of participants in the study was obtained from the management of the fast food and cafeteria outlets to permit their food handlers to participate and cooperate with the researcher for the study. The second visit was to ascertain the willingness of the food handlers to participate in the study.

The Subsequent visit was the administration of the pretested questionnaire to collect information from the food handlers on their demographic profile, general work history, information relating to personal hygiene, personal habits and their work description in the establishment. Checklist to assess base hygiene, check of the kitchen was used to assess the premises and facilities hygiene, storage facilities, washing and drainage system, water carrier system, staff cloakrooms, pest control equipment and chemical, waste disposal system was conducted through personal observation and interview.

Study Design, Data Collection and Analysis

The study adopted a survey design and was carried out in Auchi, the headquarters of Etsako West Local Government Area of Edo State. Data for the study was collected through interviews, personal observation and the use of a structured questionnaire which was validated by three (3) Academic in Hospitality and Tourism Management discipline. The instrument made use of five (5) Likert scales of Strongly Agree (5), Agree (4), Indifference (3), Disagree (2) and Strongly Disagree (1). The standard deviation and mean was computed by assigning values to the Likert scale with a decision rule at 2.5, meaning that any mean value below 2.5 was regarded as rejected while a mean value above 2.5 was accepted. The questionnaire was made up of five parts. Part one consists of the personal data of the respondent, such as the name of the fast-food outlet, registration status, gender, age, level of education, average working experience. Part two questions focus on the level of compliance of fast-food outlets to hygiene and safety regulations. Part three consists of questions on operational challenges to observing effective hygiene and safety

practices in fast food-service operations. Part four questions focus on determining the training needs of food-service personnel in the area of hygiene and safety. Part five consists of a question with a focus on ways of enhancing effective hygiene and safety practices in fast-food operations. Descriptive statistical tools such as percentage (%) frequencies, median, mean and standard deviation were used to describe the data.

Presentation of Results

Table 2 present the personal data of the respondents comprising of technical and non-technical staff of the fast-food outlets and cafeteria (4) under investigation. Of the total sampled respondents 71% were female, while 29% were male. This might be due to the higher number of females in the catering and food vendor business especially at the informal level of food preparation and retailing. In addition, the majority of the respondents are within the age range of 20-24. 96 of the respondents (71%) were single, 30 respondents representing 22% are married, while 10 respondents representing 7% are widows/widowers. This is in addition to the fact that the majority of the respondents had education up to secondary school level (62%) while 32 respondents representing 23% had higher education certificates. This might be due to the high level of education within the study location which is considered a non-disadvantageous area in terms of the level of education compared to the northern part of Nigeria. Furthermore, the average work experience of the respondents was rated high 59% (80 respondents) indicating that the majority of the workforce had working experience before gaining employment in the fast-food outlets investigated while several inexperienced staff (56 respondents) representing 41% were equally surveyed during the research.

Table 2: Personal Characteristics of the Respondents

Personal factors	Frequency	Percentage (%)
Gender		
Male	40	29
Female	96	71
Age:		
20 - 24	80	59
25 - 35	34	25
36 - 40	20	15
41 - 50	2	1
Marital Status:		
Married	30	22
Single	96	71
Widow/widower	10	7
Educational Qualification:		
Primary (FSLC)	20	15
Secondary/O'Level	84	62

Higher Education	32	23
Working experience:		
Experienced	80	59
Inexperienced	56	41

Source: Field Survey, 2021

Table 3 below showed that the percentage of workers who always put on protective clothing during a working hour is not encouraging at 41%. This was recorded mostly in the cafeteria food outlets in Eboreime market located within Auchi Polytechnic premises. The level of compliance to food hygiene regulation laws at (48) 35% was not good enough too. Availability of toilet and sanitary facilities was poor in the cafeteria outlets as it was indicated by the number of respondents 74%. The level of awareness about hygiene and safety regulations indicate 38% (48) amongst respondents, which shows that there is a need to educate and enlighten the respondents about the dangers of non-adherence to hygiene and safety laws. Other variables tested include regular washing of hands, regular cleaning of equipment before use and the need to always exclude sick workers from working in food areas.

Table 3: Hygiene and Safety items measured during the field survey

S/N	Measured Perception Items	Frequency	Percentage (%)	Remark
1.	Must wear suitable protective clothing.	56	41	Disagree
2	Wash hands always	86	63	Agree
3	We protect food from risk of infection	89	65	Agree
4.	Sanitation and cleaning practice always in work area	45	33	Disagree
5	We wash and clean equipment before use	43	32	Disagree
6	Compliance to hygiene and safety regulations	48	35	Disagree
7	Availability of water for use always	88	65	Agree
8	Toilet and sanitary facilities are enough.	101	74	Strongly disagree
9	Staff were subjected to medical test before engagement	94	38	Strongly disagree
10	Awareness level about hygiene and safety is high	51	38	Strongly disagree
11	Storage and preservation facilities are adequate	58	43	Disagree
12	There is need to have water available for use all the time	120	88	Strongly agree
13	Exclusion from cooking when sick	68	50	Indifferent
14	Regular hand washing should be encouraged	92	67	Agree
15	Regular fumigation and sterilization of utensils recommended	85	63	Agree
16	Waste disposal attitude amongst workers is encouraging	55	40.1	Disagree

Source: Field Survey, 2021

The result from table 4 shows that the respondents accepted and responded to all the perceptual items designed to provide answers to research questions on effective hygiene and safety practices in fast-food and cafeteria food outlets with high mean scores.

The result of the clustered mean on fast food and cafeteria compliance to food hygiene and safety regulation shows that the fast-food outlets investigated, do protect food from risk of infection (2.68) which is the highest mean followed by covering of cuts with clean dressings (2.61). The least mean was on wearing of protective clothing (2.42) an indication that majority of the workers in the fast-food outlets especially in the cafeterias located in Eboreime market, where their workers don't put on safety and protective clothing at all. For the perception of operational challenges, the mean average ranges from poor working hours (2.69) to (2.62) poor cleaning and cooking tools, followed by (2.47) for poor sanitation and cleaning practices and poor storage and preservation facilities. The mean cluster on operational challenges was particularly negative, hence indicating that most fast-food outlets and cafeterias do encounter a lot of operational challenges. However, for the perception of training needs for food handlers, the mean ranged from 2.98 to 2.23. We had training on environmental sanitation and hygiene has the highest meanwhile (2.98) training provision on food storage temperature and handling had the least mean (2.23).

Perception mean average on item No. 4 which is strategies for achieving effective food hygiene and safety practice indicates a mean range of between 2.73 and 2.41, with the highest being avoiding cross-contamination from handling of food; and regular education and workshops being the least mean of 2.4.

The last perception item (5) which investigates the positive impact of good hygiene and safety practice had mean range of between 2.65 to 2.22, with an increase in sales and turnover being the highest mean average (2.65) and a well-motivated and productive workforce as the least mean of 2.22, an indication that majority of the workforce in food outlets investigated are poorly remunerated.

Table 4: Mean and Standard Deviation of food hygiene and safety practice perceptions amongst food handlers in studied Fast Food and Cafeteria outlets.

Perceptual Statement	Mean	SD
Item 1: Compliance with food hygiene regulation:		
a. We protect food from risk of infection	2.68	0.71
b. Must wear suitable protective clothing	2.42	0.62
c. Wash hands after visiting the toilet	2.45	0.59
d. Don't smoke, sneeze, spit or smoke in food areas	2.52	0.67
e. Cover cuts or wounds with clean dressings	2.61	0.66
f. Report illness or contact with illness	2.43	0.73
Item 2: Operational challenges to food hygiene & Safety Practice		

a. High sanitation and cleaning habit..	2.47	0.78
b. Washing and cleaning equipment before use.	2.62	0.81
c. Availability of water for use in the kitchen all the time.	2.35	0.76
d. Poor level of awareness of hygiene and safety regulation	2.45	0.77
e. Toilet facilities available in our premises are of standard.	2.69	0.88
f. Long working hours and poor remuneration	2.71	0.89
g. Poor storage and preservation facilities.		
Item 3: Training Needs for Food Handlers		
a. Staff were trained on hygiene and safety practices.	2.43	0.67
b. Knowledge of food borne pathogens and personal hygiene.	2.44	0.62
	2.48	0.65
c. Staff were subjected to medical and fitness test on engagement.	2.98	0.74
	2.75	0.52
d. Training on environmental sanitation and hygiene	2.18	0.51
e. Exclusion from cooking while sick	2.23	0.53
f. Effective handling of equipment and maintenance		
g. Training on food storage temperature and handling		
Item 4: Strategies for achieving effective food hygiene and safety practice in food Areas		
a. Regular education and holding workshops on food hygiene and safety	2.41	0.52
practice	2.66	0.63
	2.68	0.67
b. Provision of good running water adequately	2.42	0.61
c. Encouraging regular hand washing while in the cooking area.	2.73	0.66
	2.32	0.69
d. Provision of functional storage facilities		
e. Avoiding cross-contamination from food commodity handling.		
f. Regular fumigation and sterilization of utensils.		
Item 5: Positive Impact of good hygiene and Safety Practices		
	2.63	0.61
a. No report of food poisoning	2.41	0.58
b. The staff are well motivated and remunerated	2.59	0.55
c. Increase in productivity and profit margin	2.22	0.76
d. Healthy and happy workforce	2.65	0.73
e. There is increased sales and turnover	2.42	0.51
f. Management invests in modern facilities and utensils		

Source: Field Survey, 2021

Discussion

The result of the personal data of the respondents comprised of a technical and non-technical staff of fast food and cafeteria studied shows that there were more female respondents (71%) than male (29%). This is in contrast with the study carried out by Sylvester and Craig (2013) which revealed that there were more male respondents (75%) than females (25%) in their study carried out in Owerri, Nigeria on Assessment of food safety needs of restaurants in Owerri, Imo State, Nigeria.

This study also reveals that the majority of the respondents were within the age bracket of 20 – 24 years (59%) which is consistent with the result of the research carried out by Makhosi's et al (2018) on "Enforcement of food safety regulations in food-service outlets in Johannesburg, South Africa, which shows that younger persons tend to take up more job opportunity in the fast-food business outlets than other hospitality outlets. In addition, respondents' responses on marital status measured, shows that (71%) of the respondents were single and had education up to secondary school level (62%) which is consistent with the study carried out by Marquitta et al (2014) on food safety knowledge of food service workers at University Campus in Johannesburg, South Africa. Furthermore, the average working experience of respondents was rated high (59%) which is in contrast with the study by Dundas et al (2008) which indicated that the majority of the workers in American sub-urban restaurants do not possess considerable working experience. On the use of protective clothing amongst workers (41%), level of hygiene compliance to food hygiene regulation laws at (35%) poor. Availability of sanitary and toilet facilities in studied outlets (74%) was all in contrast to the study by Sammah et al (2019) study carried out in Malaysia on the influence of occupational safety and health training towards staff hygiene practices.

In all the four (4) fast food outlets and four (4) cafeterias studied, respondents level of awareness of food safety and hygiene practices indicates (38%) which is particularly rated very low. This is consistent with the study carried out by Marguitta et al (2014) on food safety knowledge of food service workers at the university campus, Johannesburg, South Africa.

Finally, the mean cluster average for perception on operational challenges, poor working conditions, low remuneration, were (2.69) to (2.62) and (2.47) respectively signifying a need for improvement on the measured variables. This result is in contrast with the study carried out by Sylvester et al (2013) on the Assessment of food safety needs of restaurants in Owerri town, Imo State, Nigeria.

Conclusion

Results of this survey highlighted key prevention and safety issues that can increase the likelihood of food poisoning and contamination resulting in food-borne diseases originating from the fast-food outlets and cafeteria's outlets studied. The most prone catering outlets to food-borne disease outbreaks in this research are the cafeteria's located in Eboreime market (Auchi Polytechnic

premises) which lacks toilet facilities, non-availability of running water and poor storage facilities by government sanitary inspection officers. To help mitigate these risks and others, fast food outlets and cafeterias should be targeted for intensive inspection and improvement of sanitary conditions of their facilities. The survey equally highlighted the potential risks of sources of food and water supply. Others lack current knowledge of food safety among the staff of fast food and cafeteria outlets.

Government involvement in addressing food hygiene and safety challenges may be in the area of awareness creation on the dangers of poor hygiene and safety practices by food vendors, through the Environmental Health Officers (EHO) domicile in the local government areas. The management or operators of fast food and cafeteria food service outlets must be duly bound to regularly organize training workshops for staff on the dangers of poor food hygiene and safety practices in food-service outlets.

There is an urgent need also for the government to take necessary steps in initiating the five keys to safe food as suggested by the World Health Organisation (2010) which include:

- Key 1: Keep clean
- Key 2: Raw and cooked food should be kept separated.
- Key 3: Destroy food safety hazards when possible.
- Key 4: Ensure microorganisms in food don't grow.
- Key 5: Use safe water and raw materials.

The issues of registration of food vendors by government agencies should equally be taken seriously to regulate and supervise the activities of fast food and cafeteria outlets.

References

- Adeleke, S. I. (2009). Food poisoning due to yam flour consumption in Kano (Northwest) Nigeria. *Online Journal of Health and Allied Sciences*,
- Bamaiyi, P.H. (2011). Emerging food pathogens: A case study of E. coli O157:H4. *Journal of Animal and Veterinary Resources*, 3(1), 21-27.
- Campbell, J. Foskett, D. Rippington, N. and Paskins, P. (2012). *Practical Cookery for Advanced Students* (12th ed.), London: Book Point Ltd.
- Clingman, C. O. (1996). Evaluation effects of food certification training. *Journal of Environmental Health*, 38(1).
- Cook, C. C. and Casey, R. (2016). Assessment of food-service management sanitation course. *Journal of Environmental Health*, 41(5), 281-284.
- Dundes, L. and Swann, T. (2008). Food safety in fast food restaurants. *Journal of Human Resources Hospitality and Tourism*, 7(1), 153-161.
- Edun, A.O (2011) Edo investors guide, Lagos: Enimeg Nig. Ltd.
- Fatiregun, A.A.; Oyebade, O.A. and Oladokun, L. (2010). Investigation of an outbreak of food poisoning in resource limited setting. *Tropical Journal of Health Science*, 73 - 80.
- Green, L.G (2013). EHS-Net Restaurant food safety study: What have we learned? *Journal of Environment and Health*, 75(1), 44-45.

- Hungerford, R. and Peyton, R.W (1980). Goals for curriculum development in environmental education. *Env Journal of Environmental Education* 11(3), 42 - 47.
- Kauser, N. and Santoshi, L.N. (2015). Evaluation of food hygiene in commercial foodservice establishments in Hyderabad, 3(1), 16 - 20.
- Maars, M. Y. (2009). *Applied Statistics*, London: William Heinemann.
- Makhutsisia, C.M., Themba, T.S. and Morse, T. (2018). Enforcement of food safety regulation: A review of municipal records. *Journal of Food Hygiene and Safety*, 3(2), 6-17.
- Marguitta, W. and Morancie, A. (2014). Food safety knowledge of food service workers at a University campus by education level, experience and food safety training, West Indies University, Trinidad and Tobago. *Elsevier Journal of Food Science and Control*, 50(2015), 250-254.
- Osagbemi, G.; Abdulahi, A. and Aderigbe, S. (2010). Knowledge, attitude and practice concerning food poisoning among residents of Okene metropolis, Nigeria. *Journal of Social Science*, 1(2), 91-100.
- Oyemade, A.; Omokhodon, F. O.; Olawuyi, J.F.; Sridhar, M.K. and Olaesha, I.O. (1998). Environmental and personal hygiene practices. Risk factors for diarrhea among children of Nigeria market women. *Journal of Diarrhea Disease Prevention*, 16-24.
- Raab, C. A. and Woodburn, M.J. (1997). Changing risk perceptions and food handling practices of Oregon household food preparers. *Journal of Consumption Study and Home Economics*, 2(1), 117 - 130.
- Sammah, I., Siti, Z.S. and Arif, K.P. (2019). Influence of occupational safety and health-training towards staff practices at fast food restaurants in Malaysia. *Journal of Humanities and Social Sciences*, 2(7), 2-15.
- Smith, R. (1994). Food hygiene training; the chance to create a coherent training policy. *British Food Journal*, 96(7), 101-110.
- Sundershan, R.V. and Prathima, R. (2009). Food safety research in India: A review. *Asian Journal of Food and Agro-Industry*, 2(3), 170-195.
- Sylvester, N.O. and Craig, W. H. (2013). An assessment of food safety needs of restaurants in Owerri, Imo State, Nigeria. *International Journal of Environmental and Public Health*, 3(10), 3296-3309
- WHO/UNICEF Joint Monitoring Programme (JMP) for Water and Sanitation. Available online: <http://www.unicef.org>.
- World Health Organisation [WHO] (2009). Global burden of disease, WHO: Geneva, Switzerland. Available online; <http://who.intelhealthinfo/gl>
- World Health Organisation [WHO] and UNICEF (2015). Addressing health challenges from food consumption hazards. Available online. <http://www.unicef.org>.
- Zain, M.M. and Naing, N. N. (2002). Social demographic characteristics of food handlers and their knowledge attitude and practice towards food sanitation. *Trop Journal of Medical Science*, 31 - 40.