

# Appendices

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Food Safety Compliance Practices in the Nigerian Hospitality Industry: A Case Study of  
Hotels in Owerri, Imo State, Nigeria

**Dear Sir/Madam,**

We are students at the Czech University of Life Science Prague, Czech Republic, conducting research on “*food safety compliance practices in Owerri hotels* “. All the data is collected anonymously. We would appreciate it very much if you would fill in and help us conduct this research, which we believe will enhance hotel services in the study area. The filling would only take a few minutes. Thank You!

**What star category is your hotel?.....**

**Section A: Challenges faced by the hotels**

The table below shows different constraints faced by the hotels in the study area. Do you agree that these under-listed factors contribute to the challenges you face in your day-to-day operations that impact your compliance with food safety? Tick as appropriate

	<b>Constraints</b>	<b>SD</b>	<b>D</b>	<b>NAD</b>	<b>A</b>	<b>SA</b>
1	Competition among hotels					
2	Unemployment rate					
3	Lack of credit facilities to purchase the necessary facilities					
4	Limited access to food safety training for staff					
5	Insecurity in the Eastern region of Nigeria currently					
6	Unfavourable political climate					
7	Multiple taxation from the government					
8	Infrastructural constraints like poor road network					

9	Low guest occupancy					
10	Lack of certified food vendors					
<b>NB: SD: strongly disagree, D: Disagree, NAD: Neither agree nor disagree, A: Agree, SA: Strongly agree</b>						

How important for your business will you rate the following constraints that could limit your compliance with food safety standards set up by responsible public institutions in Nigeria and the global HACCP principles? Please, tick as appropriate.

	<b>Factors</b>	<b>VI</b>	<b>I</b>	<b>RNI</b>	<b>LI</b>	<b>NI</b>
8	Cost of electricity to maintain 24-hour electric power to ensure good refrigeration of foodstuffs					
9	Low income due to low demand for services from clients					
10	Inadequate foodstuff storage facilities					
11	Poor public infrastructure to get to a good source of fresh foodstuff					
12	Human capital problems in terms of quality staff having prior knowledge of food safety standards					
13	Corrupt inspection agents from a public institution that undermines their monitoring responsibilities					

**NB: VI: Very important, I: Important, RNI: Rather not important, LI: Less important, NI: Not important**

### **Section B: Food safety knowledge**

14. How do you compare your food safety knowledge to other hotel food managers? More knowledgeable ( ) Slightly more knowledgeable ( ) the same knowledge ( ) Slightly less knowledgeable ( ) Less knowledgeable ( )
15. Which of the following organizations are responsible for food safety regulations in Nigeria? NAFDAC ( ) SON ( ) NSCDC ( ) NPC ( ) CPC ( ) NCC ( ) All of the above ( ) none of the above ( )
16. Do you know HACCP principles? Yes ( ) No ( )
17. How many principles are there in HACCP? 4 ( ) 10 ( ) 7 ( ) 8 ( ) 15 ( )
18. At what temperature raw meat in the refrigerator should be stored? 6-7.9°C ( ) 8-9.9°C ( ) <6°C ( ) 10-11.9°C ( ) ≥ 12°C ( )
19. When raw meat and cooked food are stored together, this is called? Food poisoning ( ) food exposure ( ) cross contamination ( ) Invasion ( ) Food damage ( )
20. At what temperature prepared food should be stored according to HACCP principles? 34°C ( ) 44°C ( ) 64°C ( ) 74°C ( )
21. How frozen meat should be defrosted? At room temperature ( ) In the refrigerator ( ) Under running water ( )
22. Does freezing eliminate harmful germs in food? True ( ) False ( )
23. Which procedure for cleaning kitchen counters is most likely to prevent food poisoning? Spray with a strong sanitizing solution ( ) Wash with a detergent, rinse, then wipe with a sanitizing solution ( ) Wipe with a sanitizing solution, then rinse

with clean water and wipe dry ( ) Brush off any dirt or food pieces, then wipe with sanitizing solution ( ) Don't know ( )

24. When should kitchen counters be washed, rinsed, and sanitized? After each use ( )  
When you begin working with another type of food ( ) intervals if the counter is in constant use ( ) All of the above ( ) Don't know ( )

25. What should not be done when storing raw meat, fish, or poultry in the refrigerator?  
Place it in the coldest part of the refrigerator ( ) Set it in a larger container before refrigerating ( ) Place it on the lowest shelf in the refrigerator ( ) Leave it in the package they came in ( ) All of the above ( ) I don't know ( )

26. All foods are considered safe when cooked to an internal temperature of? 54°C ( )  
60 °C ( ) 66 °C ( ) 74 °C ( )

27. Staphylococcus bacteria that cause food poisoning are most likely associated with which food? Contaminated water from unfiltered mountain streams and lakes ( ) Food prepared by cooks with their bare hands and then left at room temperature ( ) Undercooked pork, especially bacon ( ) Raw or undercooked eggs and poultry ( ) Don't know ( )

28. Campylobacter bacteria are most likely associated with which food? Canned food ( ) Raw or undercooked pork ( ) Raw or undercooked poultry ( ) Raw or undercooked beef ( ) Don't know ( )

29. When purchasing foodstuff which is most important? Bulkiness ( ) Quality ( ) physical Freshness ( ) Price ( ) Proximity to your hotel ( )

**How often do you receive food safety information from the following?**

Source of information	Weekly	monthly	quarterly	Annually	<annually

30	Family and friends					
31	Newspapers/television/radio					
32	Social media/ Internet					
33	Food inspection institutes					
34	Hotelier association					
35	NGOs					
36	University studies/research institute					
37	Others					

How severe is the economic pressure from the below-listed drivers on your business?

		Very severe	severe	Rather not severe	less severe	Not severe
38	Inflation					
39	Unemployment					
40	Information cost					
41	Low salary					
42	Household living expenses					

### Section C: Compliance with food safety standards

43. Do you provide breakfast, lunch, or dinner? Breakfast ( ) Lunch ( ) Dinner ( )
44. Do you apply HACCP principles? Yes ( ) some ( ) No ( )
45. How do you wash your hands before you start preparing food for clients? Under running water with soap ( ) Water only ( ) Wipe with a towel or dishcloth ( ) You do not clean them at all ( )
46. How long do you stay washing your hands? 5 secs ( ) 30 secs ( ) 15 secs ( ) 20 secs ( ) 10 secs ( )
47. Are your foodstuff supply vendors certified by the appropriate authority? Yes ( ) No ( )
48. How often does the food safety monitoring body inspect your compliance? Twice a month ( ) once a month ( ) quarterly ( ) once in six months ( ) once a year ( ) above one year ( ) Never visited ( )
49. How often do you train your staff on food handling procedures? Weekly ( ) monthly ( ) Quarterly ( ) Yearly ( ) At the time of hiring only ( )
50. How often do check your stock? Weekly ( ) Every two weeks ( ) Monthly ( ) quarterly ( )
51. In case your electricity went off and the meat in your freezer thawed and felt warm, what do you do? throw them away ( ) Cook them right away ( ) Immediately re-freeze until solidly frozen ( )
52. How often do you check the temperature of your fridge or freezer? Daily ( ) Weekly ( ) Monthly ( ) Not at all ( )
53. How do you ensure raw food stuff from open markets is safe? Temperature check ( ) Freshness of items ( ) Smelling ( ) Time spent before getting to the hotel ( )
54. How do you handle stock at its expiration? Option sales ( ) Resell to public market ( ) Dispose of entirely ( ) Gift them to staff ( )
55. Do you have a specified hand-washing area for staff who handles food? Yes ( ) No ( )

56. Do you agree that other hotels comply with food safety procedures? Fully comply ( )  
 somehow comply ( ) Rather do not comply ( ) Do not comply at all ( ) I don't know  
 ( )

**Section D: Socio-economic characteristics**

57. What is your gender Male ( ) Female( )

58. What is your position in the hotel? Chef ( ) F&B manager ( ) Hotel manager ( )  
 Others please special.....

59. How old are you (years).....

60. What are your years of formal education (in years)?.....

61. What is your highest education level? Primary ( ) Secondary( ) OND/NCE/Diploma(  
 ) Graduate( ) Postgraduate ( )

62. How many years of experience do you have in this industry? .....

63. Marital status Married ( ) Single ( ) Divorced ( ) Widow ( ) Widower ( )

64. Frequency of meals consumed away from home: Never ( ) <3 times/week ( ) 3-2  
 times/week ( ) >2 times/week ( ) every day ( )

65. Have you experienced a food-borne digestion problem case with any of your guests in  
 the last 2 years? Several times ( ) few times ( ) rarely ( ) Never ( )

66. What is your average guest occupancy per day? < 20 guests ( ) 20 – 30 ( ) 31 – 40 ( )  
 ) 41 – 50 ( ) > 50 guests ( )

67. How many rooms do you have in your hotel? < 31 ( ) 31 – 50 ( ) > 50 ( )

**Appendix 1: Socio-demographic descriptions**

Variables	Items	frequency	%
Sex	Female	42	47.20

	Male	47	52.80
Age (years)	20 - 40	55	61.80
	> 40	34	38.20
Marital status	Single	60	67.40
	Married	27	30.30
	Divorced	2	2.30
Highest formal level	Primary	1	1.10
	Secondary	4	4.50
	NCE/OND/Diploma	19	21.40
	Graduate	43	48.30
	Postgraduate	22	24.70
Years of formal education	< 5	3	3.40
	5 - 10	8	9.00
	> 10	78	87.60
Position in the hotel	Chef/kitchen staff	25	28.10
	F&B manager	22	24.70
	General manager	42	47.20
Estimated daily guests	< 20	25	28.10
	20 - 30	31	34.90
	31 - 40	18	20.20
	41 - 50	6	6.70
	> 50	9	10.10
Years of experience in the industry	> 5	8	9.00
	5 - 10	23	25.80
	> 10	58	65.20

## Appendix 2: Food safety knowledge descriptions

Variables	Items	Frequency	%
Do you know HACCP principles?	Yes	74	83.10
	No	15	16.90
How many principles does HACCP have?	4 principles	4	4.50
	10 principles	11	12.40

	7 principles	58	65.20	
	8 principles	12	13.50	
	15 principles	4	4.50	
What temperature is suitable for raw meat storage in the refrigerator?	6-7.9°C	14	15.70	
	8-9.9°C	5	5.60	
	<6°C	56	62.90	
	10-11.9°C	7	7.90	
	>12°C	7	7.90	
Storing raw meat and cooked food together causes what?	Food poisoning	9	10.10	
	Food exposure	9	10.10	
	Cross contamination	69	77.50	
	Food damage	2	2.20	
How do you defrost frozen meat?	At room temperature	16	18.00	
	In the refrigerator	38	42.70	
	Under running water	35	39.30	
Does freezing eliminate harmful germs?	Yes	17	19.10	
	No	72	80.90	
At what temperature do you store food ready to be served to guests?	34°C	2	2.20	
	44°C	5	5.60	
	64°C	64	71.90	
	74°C	18	20.20	
When purchasing foodstuffs, which is more important?	Bulkiness	1	1.10	
	Quality	35	39.30	
	Physical	33	37.10	
	Freshness	5	5.60	
	Price	15	16.90	
Campylobacter bacteria are most likely associated with which food?	Canned food	8	9.00	
	Raw or undercooked pork	12	13.50	
	Raw or undercooked poultry	48	53.90	
	Raw or undercooked beef	1	1.10	

	I don't know	20	22.50
Staphylococcus bacteria that cause food poisoning are most likely associated with which food?	Contaminated water from unfiltered mountain streams and lakes	16	18.00
	Food prepared by cooks with their bare hands and left at room temperature	23	25.80
	Undercooked pork, especially bacon	26	29.20
	Raw or undercooked eggs and poultry	9	10.10
	I don't know	15	16.90

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