OBSERVATIONAL STUDY ON OPEN DISPLAY OF SALT IN FOOD SERVICE ESTABLISHMENTS IN THE KUMASI METROPOLIS

CITIES4HEALTH

IMS CONSULT-PRO LIMITED

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PREPARED FOR: ENVIRONMENTAL SUB-COMMITTEE, KUMASI METROPOLITAN ASSEMBLY
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Partnership for Healthy Cities

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EXECUTIVE SUMMARY

This report presents findings from a cross-sectional observational study examining salt display practices across 156 food service establishments in the Kumasi Metropolis. The study aimed to understand how salt is presented and used in and out-of-home food environments, which is critical for developing effective interventions to reduce population-level, salt intake and prevent hypertension-related cardiovascular diseases. Salt was openly displayed on serving tables or service counters at 62.2% of establishments (97 of 156). Chop bars showed the highest salt availability (68.3%), followed by restaurants (55.6%). Open bowls were the most common salt dispenser type (42.9% of outlets with salt). None of the establishments had health advisories about salt usage. Geographic variations revealed higher salt availability in Manhyia South (78.9%) and Bantama (76.5%). These findings indicate substantial opportunities for public health interventions in the food service sector to reduce discretionary salt intake among the population.

1. BACKGROUND AND RATIONALE

Excessive dietary salt consumption is recognized globally as a leading risk factor for hypertension, stroke, and cardiovascular disease. The World Health Organization recommends limiting daily salt intake to less than 5 grams per person (WHO, 2025). However, foods consumed outside the home, particularly in local restaurants, chop bars, and street food establishments can contribute significantly to daily salt intake.

In Ghana, where eating outside the home is common across all socioeconomic groups, understanding salt availability and usage patterns in food service outlets is essential. The practice of displaying salt openly on tables or counters allows customers to add salt to already-prepared meals, creating what nutritionists call "discretionary salt intake." This additional salt, beyond what's already in the food, can push individuals well beyond recommended daily limits. Some studies show the median salt intake in Ghana is 8.3 g/day, with 77% of the sampled population exceeding the recommended daily WHO recommendation (Menyanu, et al., 2020).

This study was commissioned to:

1. Document current salt display practices in Kumasi's food service sector
2. Identify high-risk establishment types and geographic areas
3. Generate evidence for targeted interventions
4. Support policy development for healthier food environments

2. METHODOLOGY

2.1 Study Design

We employed a cross-sectional observational design with brief structured observations conducted at each food service outlet. Trained observers spent 5-10 minutes at each location, documenting salt availability, dispenser types, and customer behavior without disrupting normal operations.

2.2 Study Population and Sample

The study targeted licensed food service establishments in the 156 establishments in the Kumasi Metropolis, including:

- Local chop bars (traditional eateries)
- Restaurants
- Hotels with dining services
- Fixed-point street vendors

Geographic coverage: The study covered nine sub-metropolitan areas:

- Manhyia South (32 outlets)
- Subin (29 outlets)
- Manhyia North (20 outlets)
- Bantama (17 outlets)
- Nhyiaeso (10 outlets)
- Others with smaller samples

2.3 Data Collection Procedures

Field observations were conducted between October 27 and November 10, 2025. Trained field staff used electronic data collection tools (KoboCollect) to:

1. Obtain informed consent from establishment managers
2. Observe salt display practices unobtrusively
3. Photograph salt dispensers and health advisories (where present)

4. Record customer behavior regarding salt usage
5. Document establishment characteristics

2.4 Ethical Considerations

- Informed consent was obtained from all participating establishments
- No personal information about customers was recorded
- Observations were conducted discretely to avoid influencing normal behavior
- Establishments could decline participation or withdraw at any time

3. FINDINGS

3.1 Overall Salt Availability

Out of 156 observed establishments 97 outlets (62.2%) displayed salt on serving tables or service counters. 59 outlets (37.8%) did not have salt openly available. This means that nearly two-thirds of food service establishments in Kumasi provide customers with the option to add extra salt to their meals, potentially increasing their daily salt intake beyond already high levels in prepared foods.

3.2 Salt Availability by Establishment Type

Different types of food establishments showed varying patterns of salt display. This is presented in table 1.

Table 1: Salt availability at the establishments

Establishment Type	Total Observed	Salt Available	Percentage
Chop bar	101	69	68.3%
Restaurant	27	15	55.6%
Hotel	4	1	25.0%
Street vendor (fixed)	12	6	50.0%
Other	12	6	50.0%

Figure 1: Salt availability patterns

Chop bars represent the highest-risk category, with more than two-thirds (68.3%) displaying salt openly. These traditional eateries are extremely popular among working-class Ghanaians and students, serving affordable local dishes. The high salt availability here means a large segment of the population has regular access to discretionary salt when eating out.

Restaurants showed moderately high rates (55.6%), though lower than chop bars. This may reflect greater awareness of health guidelines among more formal dining establishments.

Hotels had the lowest rate (25%), possibly due to more standardized food service practices and greater attention to health and safety regulations. However, with only 4 hotels observed, this sample is too small to draw definitive conclusions about hotel practices across the metropolis. Street vendors at fixed locations

showed 50% salt availability, indicating that even informal food services commonly provide salt to customers.

3.3 Types of Salt Dispensers

Among the 97 establishments with salt available, the study documented how salt was presented to customers:

Table 2: Type of Salt dispenser used

Dispenser Type	Frequency	Percentage
Open bowl	42	43.3%
Shaker	32	33.0%
Sachet	18	18.6%
None specified/Other	5	5.2%

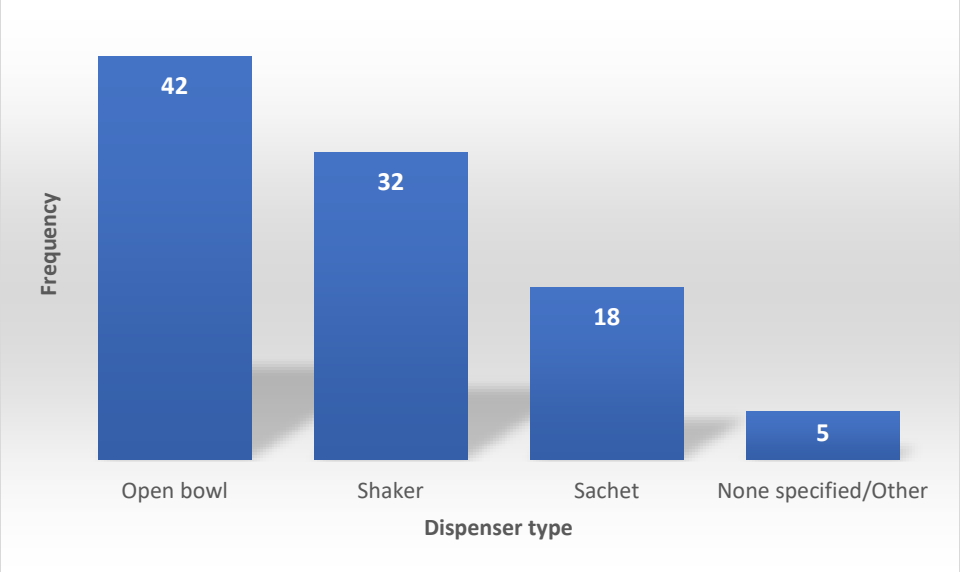

Figure 2: Type of dispenser

Open bowls were most common (43.3%), representing a significant hygiene concern. Open bowls allow direct contact between customers' hands or utensils and the salt supply, creating potential contamination risks. Additionally, it's difficult for customers to control portions from open bowls, often leading to over-salting. Shakers (33.0%) provide better hygiene and somewhat better portion control, though customers can still liberally add salt. Among establishments with salt available , sachets (18.6%) were least common. While sachets provide the best hygiene, they may encourage wasteful usage as customers often use entire packets regardless of need.




3.4 Geographic Variations in Salt Availability

Salt display practices varied significantly across different areas of Kumasi and results are presented in table 3.

Table 3: Geographic variations of salt availability

Sub-Metro Area	Outlets Observed	Salt Available	Percentage
Manhyia South	38	30	78.9%
Bantama	17	13	76.5%
Subin	30	18	60.0%
Nhyiaeso	10	6	60.0%
Manhyia North	20	8	40.0%

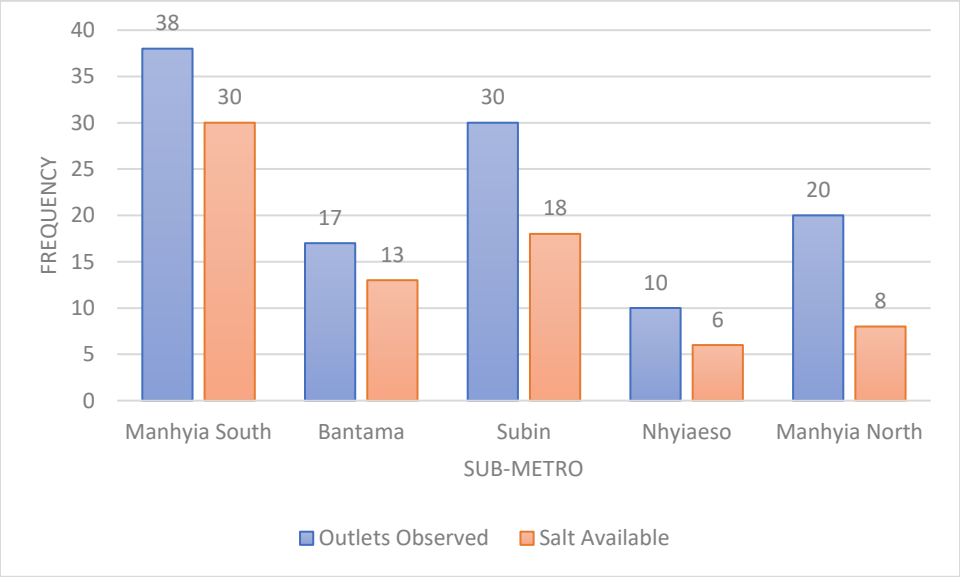

Figure 3: Geographic variation of salt availability

Manhyia South and Bantama showed particularly high rates (76-79%), suggesting these areas should be priority zones for intervention programs. Manhyia North showed notably lower rates (40%), possibly indicating different cultural practices or establishment characteristics in that area. These geographic patterns may reflect local food culture, customer expectations, or the predominant types of establishments in each area.

3.5 Health Advisories and Signage

No establishment displayed any health advisory, signage, or menu information about salt usage or related health advice. This represents a critical missed opportunity for health education. Even a simple table tent with messages like "Use salt in moderation" or "Reduce salt for better heart health" could influence customer behavior at the point of consumption.

3.6 Customer Behavior Observations

Among outlets where customers were present and eating: Customer observations were recorded in 89 outlets. At 52 locations (58.4% of outlets with customers present), observers witnessed at least one customer adding salt to their meal during the observation period. This indicates that salt usage is common when salt is made available, though we did not count what proportion of all customers at each location used salt. The observation confirms that discretionary salt addition is a regular practice in Kumasi's food service establishments.

4. DETAILED ANALYSIS: INTERACTION BETWEEN LOCATION AND SALT PRACTICES

4.1 Establishment Types Across Different Areas

Our data reveals interesting patterns when we examine how different types of establishments are distributed across the metropolis and their salt display practices:

Manhyia South (Highest overall salt availability - 78.9%):

This area is made up of mixed establishment types. This area recorded the overall highest salt availability (78.9%). The food joint in this area were predominantly chop bars (26 out of 38 outlets). This area has a high density of traditional eateries serving working-class populations. Street food vendors also common. Almost all chop bars in this area (92%) displayed salt

Subin (Moderate salt availability - 60.0%):

This area has a more diverse mix of eateries: chop bars, restaurants, and hotels. Several hotels observed here showed no salt display. Adum area within Subin had relatively lower rates among restaurants. Asafo area showed higher rates, particularly among chop bars

Bantama (High salt availability - 76.5%):

This area were made up of almost exclusively chop bars and street vendors. It is a traditional market area with heavy foot traffic. Very few formal restaurants or hotels could be found here. Cultural expectation of salt availability appears strong

Manhyia North (Lowest salt availability - 40.0%):

This area is made up of mixed establishment types. Several eateries were found at airports/roundabout area. They were made of more middle-class dining establishments. There was a notable absence of salt in many outlets suggesting different customer demographics or management policies

4.2 Salt Dispenser Types by Location

Different areas showed preferences for different dispenser types:

Urban commercial areas (Adum, Asafo):

In these areas there were higher proportion of sachets (25% of salt-displaying outlets). This reflects faster-paced service environment and the presence of more takeaway/take-out services. Sachets are practical for customers who order food to go, as they can easily carry them along with their meals. The higher customer turnover in commercial areas also justifies the use of individual packets for convenience and speed of service

Residential/market areas (Bantama, Dechemso):

These areas predominantly displayed salt in open bowls (55% of salt-displaying outlets). They are more of the traditional serving style. Thus there is a lower operational costs

Mixed commercial-residential (Nhyiaeso):

This area had equal distribution between shakers and open bowls. This area represents transitional food service practices

5. IMPLICATIONS AND DISCUSSION

5.1 Public Health Implications

The findings reveal several concerning patterns with direct implications for population health:

1. Widespread Discretionary Salt Access

With 62% of establishments providing open salt access, a significant proportion of the population eating outside the home has opportunities to increase their salt intake beyond already high amounts in prepared foods. For someone eating at chop bars daily (common among workers and students), this could mean adding 2-4 grams of extra salt daily nearly the WHO's entire recommended daily limit.

2. Hygiene Risks in Traditional Settings

The prevalence of open bowls (43% of salt displays) creates dual risks: both excessive salt consumption and potential contamination. Shared open containers touched by multiple customers throughout the day present clear hygiene concerns.

3. Geographic Health Disparities

Areas like Manhyia South and Bantama, with 76-79% salt availability, likely have populations with higher discretionary salt exposure. If these areas also have socioeconomic challenges limiting access to healthcare, residents face compounded cardiovascular disease risks.

5.2 Cultural and Economic Context

Several factors help explain the observed patterns:

Customer Expectations: In Ghanaian food culture, the availability of salt and pepper at the table is often expected, allowing diners to adjust seasoning to personal preference. Many customers view this as good service.

Economic Considerations: Open bowls are most economical for small chop bars operating on thin margins. Providing shakers or sachets increases costs.

Traditional Practices: Communal dining and sharing are important cultural values. Open bowls align with traditional serving styles where everyone seasons from a shared container.

Lack of Awareness: Many food service operators and customers are unaware of the health risks of excess salt consumption or the link between dietary salt and hypertension.

6. RECOMMENDATIONS

Based on these findings, we recommend the following:

- A ban on open display of salt in Food Service Establishments
- Adopt salt reduction as priority in Metropolitan Health Strategy
- Allocate budget for awareness campaigns and signage production
- Revise food service licensing requirements to include salt guidelines
- Intervention should be done across all Food Service Establishments in Kumasi.

7. LIMITATIONS

Several limitations should be considered when interpreting these findings:

1. **Observation Bias:** The presence of observers may have slightly influenced staff or customer behavior, though efforts were made to be unobtrusive.
2. **Snapshot Assessment:** Observations captured practices at a single point in time. Salt display practices might vary by time of day, day of week, or season.
3. **Self-Selection:** Some establishments declined participation. If these differed systematically from participating outlets, results might not fully represent all establishments.
4. **No Dietary Assessment:** We documented availability but did not measure actual salt consumption. The study cannot directly quantify health impacts.
5. **Urban Focus:** Findings apply to Kumasi Metropolis and may not represent rural food service settings in Ashanti Region or other regions.
6. **Limited Customer Interaction:** Ethical considerations prevented detailed customer interviews, so we cannot fully explain motivations for salt usage.

8. CONCLUSION

This observational study reveals that salt is widely available at food service establishments throughout Kumasi Metropolis, with 62% of outlets displaying salt on tables or service counters. Chop bars, which serve large numbers of working-class citizens daily, showed the highest availability at 68%. The predominance of unhygienic open bowls and absence of health advisories present clear opportunities for intervention. The geographic concentration of salt availability in areas like Manhyia South and Bantama suggests these locations should receive priority attention in public health programs. The findings provide strong justification for policy action at the metropolitan level, including regulations on salt display methods and requirements for health advisories. Most encouragingly, several practical, low-cost interventions can be implemented immediately: awareness campaigns, provision of table signage, and partnerships with willing food service operators. Success will require coordinated action by the Kumasi Metropolitan Assembly, Ghana Health Service, food service operators, and community stakeholders.

Report prepared by:
IMS Consult Pro Limited
November 2025

For inquiries contact:
Environmental Sub-Committee
Kumasi Metropolitan Assembly

9. APPENDIX

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DIRECTOR OF RESEARCH, INNOVATION, PUBLICATION & TECHNOLOGY TRANSFER

Our Ref: Date:

Your Ref:

Our Ref: DRIPTT-IRB Whyte 2025a
Your Ref: **Date: 8th October 2025**

Barry Kojo Whyte
IMS Consult
Accra, Ghana

Dear Sir,

APPROVAL OF ETHICAL METHODOLOGY REVIEW AND DRIPTT OVERSIGHT FOR OFF-CAMPUS DATA COLLECTION

Project: "Observational study on open display of salt in Food service establishments in the Kumasi metropolis."
Researcher: Barry Kojo Whyte
Ethics ID: **RE #151-2025-DRIPTT**

The Research Ethics Committee of Accra Technical University (ATU), through the Directorate of Research, Publication, and Technology Transfer (DRIPTT), has reviewed and approved the research methodology and participant-protection procedures for the above-titled study.

This letter confirms that the approved approach meets ATU's research ethics requirements and that DRIPTT will provide oversight of the data collection process to ensure compliance with the approved protocol and ATU's research ethics policy.

This approval does not grant permission to access your premises, staff, clients, or data. Your organisation retains the authority to grant or refuse access, set conditions for engagement, and withdraw participation at any time.

This approval was granted in accordance with the Accra Technical University Research Ethics Policy and the principles of responsible research conduct. DRIPTT will monitor compliance with the approved methodology throughout the data collection period.

For verification or to raise any ethics-related concern, please contact the Directorate of Research, Publication, and Technology Transfer (DRIPTT) at riptt@atu.edu.gh, quoting the Ethics ID above.

This approval remains valid until 30th December 2025. Any major change in the research design, instruments, or participant recruitment must be reported to DRIPTT for further review before implementation.

Yours faithfully,

.....

DR. PETER NYANOR

Director – Directorate of Research, Innovation, Publication and Technology Transfer

Cc: HOD, Science Laboratory Technology
DRIPTT-IRB File

STUDY PROTOCOL

OBSERVATIONAL STUDY ON OPEN DISPLAY OF SALT IN FOOD SERVICE ESTABLISHMENTS IN THE KUMASI METROPOLIS

BY: IMS CONSULT PRO

Partnership for
Healthy Cities

Background

Excess dietary salt is a major risk factor for hypertension and cardiovascular disease. Food eaten outside the home (restaurants, chop bars, hotels, street vendors) can contribute substantially to daily salt intake. Understanding how salt is presented and used in food service outlets whether salt is available on tables, offered at the counter, presented in sachets, open bowls or shakers, and whether customers add salt will inform interventions to reduce population salt intake through changes to the food environment that address discretionary intake.

Objectives

General Objective: To determine the prevalence of salt displayed in food service outlets.

Specific Objectives:

1. Determine the availability of salt shakers displayed on serving tables
2. Identify the types of salt dispensers or containers used in food service outlets (e.g., shakers, open bowls, sachets)
3. Observe if salt is offered on demand
4. Document the presence of salt-related health advisories or signage within the outlets
5. Generate evidence-based recommendations to guide policy actions on salt reduction in the out-of-home food environment

Study Design

Cross-sectional observational study with short (5–10 minute) unobtrusive observations at each outlet followed by a brief structured interview with a staff member or manager.

Study Population

Food Service Establishments in the Kumasi Metropolis involving local chop bars, restaurants, and hotels.

Population and Eligibility

Inclusion Criteria (Outlets):

- Operational, licensed food service establishments (licensed by Ministry of Health or Food and Drugs Authority) that serve meals with soup
- Street vendors that operate fixed food service points (as opposed to mobile vendors)

Exclusion Criteria:

- Mobile food vendors
- Fast food sellers (rice, waakye, kenkey sellers)
- Outlets closed during planned visit
- Unlicensed establishments

Sampling and Sample Size

Sampling Approach: The Metropolis will be stratified based on existing Town Councils within each Sub-metro of the Metropolis. Licensed Food Service Establishments will be observed in each Town Council for adequate representation.

Sample Size: A total of 100 out of 335 licensed food service establishments (Local Chop bars, Restaurants, and Hotels) will be assessed for open display of salt on their service tables or counters.

Data Collection Procedures

Observers will be trained to monitor food establishments for availability of salt on display. A checklist will be used to record observations silently and independently.

Expected Outputs

- Report on observations made from FSE salt display

- Recommendations for interventions to reduce salt use in food service settings
- Evidence for public health communication campaigns on hypertension

Timelines

Activity	Timeline
Tool development and pretesting	1 week
Enumerator training	1 day
Data collection	2 weeks
Data analysis	1 week
Report writing	1 week

Data Management

Kobo collect will be used to collect field data. Daily uploads will be sent immediately after collection to secure server. Supervisors will review data submitted each day to ensure proper completeness and appropriate images taken.

Analysis Plan

Descriptive and inferential statistics will be used in analyzing data from the observations made and will be presented in charts, texts, and graphs.

Budget Considerations

Personnel allowance, training, transport, data, printing, management/analysis, etc.

Dissemination Plan

The outcome of this survey will be shared with the Environmental Sub-Committee to push for recommendations at Authority meetings and subsequent General Assembly Meetings for

implementation of recommendations. Key stakeholders (including Ministry of Health representatives, local government authorities, and food service industry representatives) will be informed of the survey outcomes and implications to lobby for support in addressing salt use in food service establishments.

Observational Guide

Observer Instructions

1. **Obtain consent first:** Request and receive informed consent from the outlet manager or staff member before conducting the observation.
2. **Observe for 5–10 minutes** before recording findings. Do not interrupt the cook/servers. Wait until a natural break in service (between customers/dishes) before recording the findings.
3. **Record only what you see.** If uncertain, write a brief note.
4. **Rate behavior as observed** at the time don't ask staff to repeat actions.
5. **Use the coded options** provided in the checklist.

Informed Consent Statement

"We are conducting a short survey to understand food service practices, including salt use. Your participation is voluntary and will take approximately 15 minutes. Do you agree to take part in this survey?"

- YES, I agree to participate
- NO, I do not want to participate

"You may stop the survey at any time or skip any questions you're not comfortable answering. Would you like to continue?"

- YES, continue
- NO, I prefer not to continue

If the respondent selects "NO" to either question, the interviewer should thank the individual and discontinue the survey.

Observational Checklist (Use Electronic Form or Paper)

A. GENERAL INFORMATION

1. _____ Study ID / Outlet code
2. _____ Observer initials
3. _____ Date / Time
4. **Outlet type:**
    - Chop bar
    - Restaurant
    - Hotel
    - Street vendor (fixed point)
    - Other: _____

4b. **Comments on outlet setup or context (optional):** _____

B. OBSERVATIONAL SURVEY (CUSTOMERS)

5. **Salt available on serving table?**
    - NO
    - YES
6. If yes, take a picture
7. **Salt offered to customers at service counter instead?**
    - NO
    - YES

8. If YES, take a picture
9. **Type of table salt dispenser available:**
    - SHAKER
    - OPEN BOWL
    - SACHET
    - NO DISPENSER
    - Other (Please specify): _____
10. **Is there any signage, poster, or menu note about salt usage or health advice (e.g., "use salt in moderation")?**
    - NO
    - YES
11. If you answered "Yes" for Question 10, take a picture of the signage/salt advisory (e.g., poster, sign, table tent)
12. **Are there customers currently eating?**
    - NO → Skip to end
    - YES → Continue to next question
13. **Are one or more customers observed using salt at the table or consumption point?**
    - NO
    - YES