



3rd International
Faecal Sludge Management
Conference



Assessing Public Perception of Odour in a Community; Case of Ayigya Zongo, an Urban Poor Community in Ghana

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Purpose of Study

- To establish odour nuisance
- To serve as baseline for further qualitative and quantitative study.
- To identify other sources of odour within the community.

The Survey Area



Map of Ayigya Zongo showing area considered for studies

Estimation of Sample Size

$$n = N / [1+N(\alpha)^2]$$

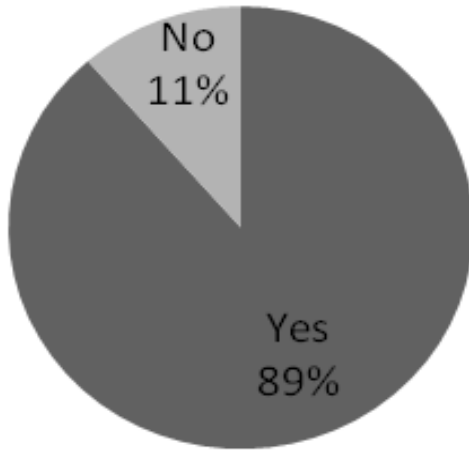
Description	Value
Estimated Adult population of Ayigya	24,458
Sample size	804
Confidence Level (margin of error)	96.5% (0.035)

NB. Based on 2010 Population and Housing Census

Results

Statistically significant difference test

NOTICE OF ODOUR



Hypothesis	Df *	Chi-Square	P value
Notice of odour is independent of sex of respondents	1	1.067	0.303 ($P > 0.05$)
Notice of odour is independent of age of respondents	4	2.263	0.687 ($p > 0.05$)

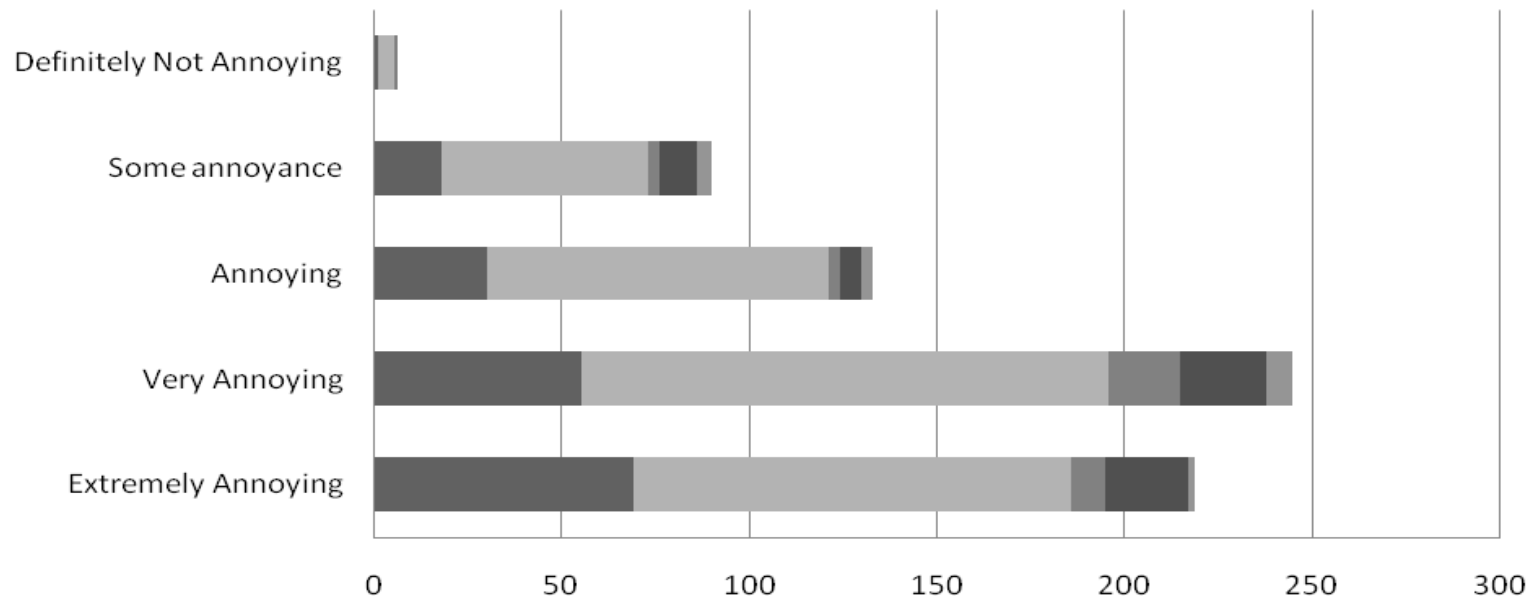
Results

Sex and Age group of respondents

Age (years)	Male, % (n)	Female, % (n)	Total, % (n)
18 - 25	12.2 (98)	17.5 (141)	29.7 (239)
26 - 40	18.8 (151)	23.4 (188)	42.2 (339)
41 - 50	8.0 (64)	10.8 (87)	18.8 (151)
51 - 60	3.7 (30)	5.5 (44)	9.2 (74)
> 60	0.1 (1)	-	0.1 (1)
Total	57.2 (344)	42.8 (460)	100.0 (804)

Results

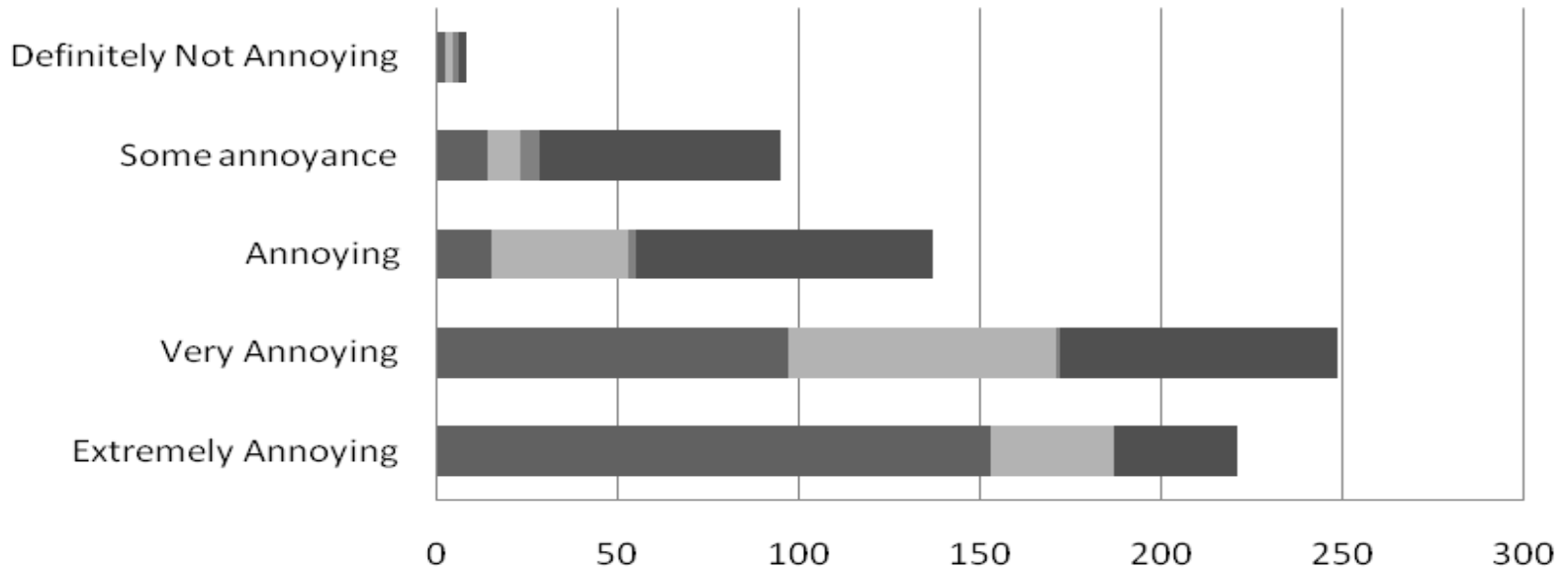
Annoyance Level and Reported Source



	Extremely Annoying	Very Annoying	Annoying	Some annoyance	Definitely Not Annoying
■ Communal Toilet	69	55	30	18	1
■ Drains	117	141	91	55	4
■ Others	9	19	3	3	1
■ Refuse Dump	22	23	6	10	
■ Urine	2	7	3	4	

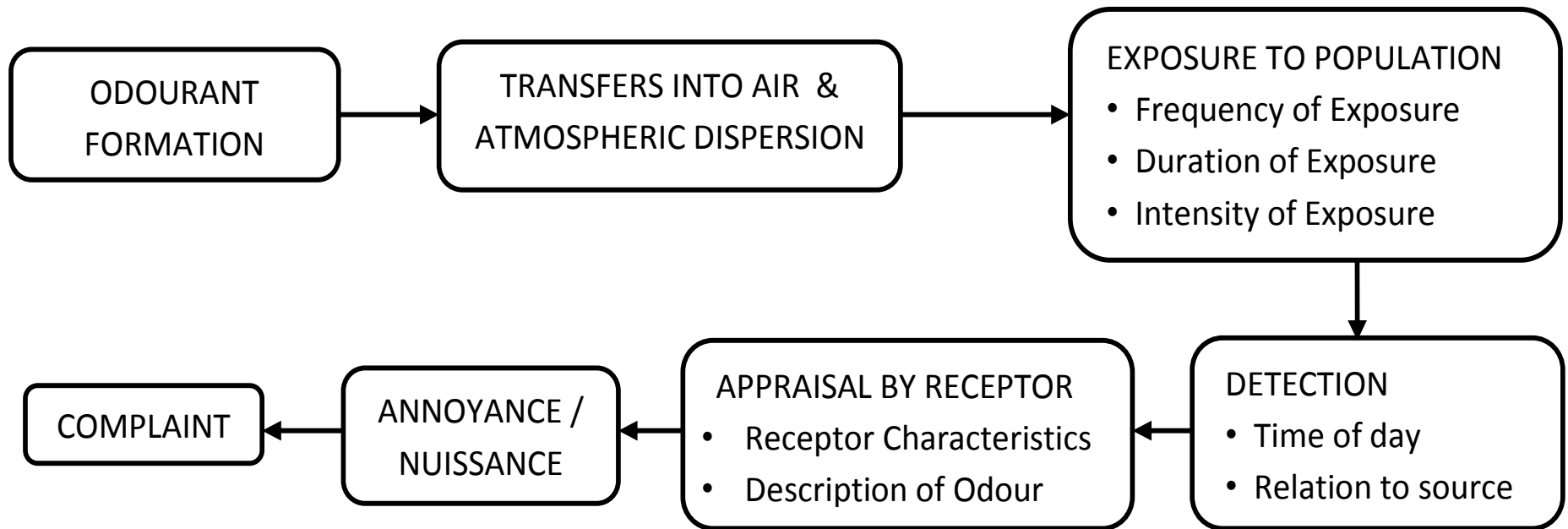
Results

Frequency of Odour Occurrence



	Extremely Annoying	Very Annoying	Annoying	Some annoyance	Definitely Not Annoying
■ All the time	153	97	15	14	2
■ Often	34	74	38	9	2
■ Seldom		1	2	5	2
■ Sometimes	34	77	82	67	2

Mechanism leading from Odour to Complaint



Moving forward...

ASSESS ODOUR LEVELS AND DEVELOP CONTROL MECHANISM

LABORATORY SCALE

FIELDWORK/MODELLING

CHARACTERIZATION OF ODOUR

EFFECTS OF ADDITIVES ON ODOUR PRODUCTION

VENTILATION RATE STUDIES

MODELLING ODOUR DISPERSION

Building of laboratory set up

Characterize odour compounds

Analyses of data

Conclusions and Recommendations

Identification of additives

Laboratory Analysis to study effects of additives (pH, Temp., moisture content)

Data Analysis

Conclusion and Recommendation

Privy room dimensions (area of openings, floor area and volumes)

Meteorological Data (Wind speed, direction & temperature)

Determination of ventilation rates

Conclusion and Recommendation

Complaint & Inspection odour survey

Process Description & Model Structure

Where it comes from:

- Physical Characteristics
- Emission Rate

How does it travel:

- Meteorological data

Where does it go:

- Receptor grid

Model Calibration & Validation

CONTROL MECHANISM

FSM3

Conclusion

- The survey established that odour is a nuisance
- Other sources of odour were identified
- Need for efforts to curb the problem



Thank you for your kind attention!!!

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