Socio-Demographic Determinants of Monthly Environmental Sanitation Practices among Residents of Owerri Municipal Lga, Imo State, Nigeria

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ABSTRACT

Environmental sanitation is a critical component of public health and sustainable development, particularly in urban areas of developing countries. This study investigates the socio-demographic determinants influencing the practices of monthly environmental sanitation exercises among residents of Owerri Municipal Local Government Area (LGA), Imo State, Nigeria. Using a mixed-methods approach, data were collected from 384 respondents through questionnaires. The study employed a cross-sectional descriptive survey design, with a multistage sampling technique to ensure a representative sample. Results indicate that 65% of residents participate in sanitation exercises, with higher participation among women (70%) than men (60%). Key challenges include lack of resources (45%) and low awareness (30%). Socio-demographic factors such as age, education, occupation, and marital status significantly influence participation, with older adults and more educated individuals showing higher engagement than others. These findings contribute to the discourse on sustainable urban sanitation and provide actionable insights for policymakers and public health practitioners.

Keywords—Environmental sanitation, socio-demographic factors, public health, community participation, sanitation practices

INTRODUCTION

Background to the Study

Environmental sanitation is a widely known public health intervention with significant contributions to national development. The United Nations (2019) defines environmental sanitation as activities aimed at maintaining a sanitary physical environment in human settlements. These practices include the removal and treatment of human excreta, solid waste, and sewage, controlling disease vectors, and providing washing facilities for personal and household hygiene (WHO, 2022). Environmental sanitation exercises are designed to ensure proper solid waste, wastewater, and excreta disposal, as well as cleaning of drainage systems in personal, household, and community settings (Mmon & Mmon, 2021).

The benefits of consistent sanitation practices are numerous, including reducing the breeding of microorganisms that cause infections (Qazem et al., 2019). However, individual commitment to active participation in sanitation exercises remains a challenge, particularly in urban areas, where these activities are often perceived as time-consuming and costly (Igudia et. al., 2019).

In Nigeria, monthly environmental sanitation exercises are mandated by government policy, including in Owerri Municipal LGA, Imo State. Prüss-Ustün et al., (2019) stated that despite these promoting a healthy environment, the extent to which this is practiced remains uncertain. This study, therefore, seeks to investigate the factors influencing participation in monthly environmental sanitation exercises in Owerri Municipal LGA.

Statement of the Problem

The poor practice of environmental sanitation in Nigeria poses a major threat to social and economic development as well as human survival (Mmon & Mmon, 2021). While environmental sanitation remains a key agenda for governments and development agencies, regular participation in monthly sanitation exercises has not been strictly adhered to in many urban areas. Factors such as age, gender, social class, religion, urban-rural differences, and economic constraints influence participation (Bui, 2021). Studies indicate that the enormous quantities of solid waste and wastewater generated in urban areas negatively impact sanitation efforts (Ejati et al., 2018). Inadequate sanitation practices contribute to lower living standards, increased infection rates, and high infant mortality and morbidity (Gutberlet & Uddin, 2017). Poor sewage and refuse disposal, inadequate water supply, economic limitations, and time constraints further hinder participation in sanitation exercises (Muhammad et al., 2017).

Despite government policies mandating environmental sanitation, including proper waste disposal and the provision of potable water in premises, compliance remains inconsistent (OECD, 2020). This study aims to examine the environmental, social, economic, and political factors influencing participation in monthly environmental sanitation exercises in Owerri Municipal LGA.

Objectives of the Study

General Objective: To investigate the socio-demographic factors that influence the practice of monthly environmental sanitation exercises among residents of Owerri Municipal LGA, Imo State, Nigeria.

Specific Objectives:

a) To examine the extent to which socio-demographic factors affect the practice of monthly environmental sanitation exercises.

b) To assess the impact of sex on participation in monthly environmental sanitation exercises.

METHODOLOGY

Research Design

This study employed a cross-sectional descriptive survey design to investigate the factors influencing the practice of monthly environmental sanitation exercises among residents of Owerri Municipal LGA, Imo State, Nigeria.

Population of the Study

The study population comprised all 125,337 adult males and females residing in the five villages of Owerri Municipal LGA, consisting of 60,882 males and 64,455 females (2006 National Census, Nigeria).

Data Collection Procedure

Data collection was conducted using both administered and self-administered questionnaires. To ensure high response rates, the questionnaire was distributed to respondents in their residences during the evenings, after work hours. In each household, all consenting adults present at the time of the study were included. If a household's occupants were absent, the next available household was sampled. The data collection lasted 30 days, with 10 days allocated to each of the three selected villages.

Method of Data Analysis

Data were analyzed using both quantitative and qualitative methods. The data were cleaned, coded, and entered into the Statistical Package for Social Sciences (SPSS) version 25.0 for analysis. Descriptive statistics such as frequencies, percentages, chi-square tests, and charts were used to present the findings.

RESULTS

Demographic Information

Table I Respondents' Age Range by Villages

Age Range	Amawom (n/%)	Umuororonjo (n/%)	Umuonyeche (n/%)	Total (n)	Total (%)
<18	12 (9.38%)	8 (6.25%)	7 (5.47%)	27	7.03%
19-25	21 (16.41%)	23 (17.97%)	21 (16.41%)	65	16.93%
26-32	20 (15.63%)	18 (14.06%)	25 (19.53%)	63	16.41%
33-39	17 (13.28%)	17 (13.28%)	20 (15.63%)	54	14.06%
40-46	6 (4.69%)	15 (11.72%)	10 (7.81%)	31	8.07%
47-53	12 (9.38%)	13 (10.16%)	10 (7.81%)	35	9.11%
54-60	20 (15.63%)	14 (10.94%)	9 (7.03%)	43	11.20%
61+	20 (15.63%)	20 (15.63%)	26 (20.31%)	66	17.19%
Total	128 (100%)	128 (100%)	128 (100%)	384	100%

Table 1 presents the respondents' age distribution. The majority (17.19%) were aged 61 years and above, followed by 16.93% in the 19-25 age group. The least represented group was those under 18 years (7.03%). P-value = 0.53.

Table II Respondents' Sex By Villages

Sex	Amawom (n/%)	Umuororonjo (n/%)	Umuonyeche (n/%)	Total (n)	Total (%)
Male	75 (58.59%)	50 (39.06%)	89 (69.53%)	214	55.73%
Female	53 (41.41%)	78 (60.94%)	39 (30.47%)	170	44.27%
Total	128 (100%)	128 (100%)	128 (100%)	384	100%

Table II shows the gender distribution. Male respondents (55.73%) were more than female respondents (44.27%). P-value = 0.00000429.

Table III Respondents' Highest Education Attained By Villages

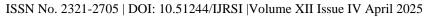| Education Level	Amawom (n/%)	Umuororonjo (n/%)	Umuonyeche (n/%)	Total (n)	Total (%)
No Formal Education	7 (5.47%)	4 (3.13%)	6 (4.69%)	17	4.43%
Primary Education	11 (8.59%)	14 (10.94%)	16 (12.5%)	41	10.68%
Secondary Education	39 (30.47%)	35 (27.34%)	43 (33.59%)	117	30.47%
Tertiary Education	71 (55.47%)	75 (58.59%)	63 (49.22%)	209	54.43%
Total	128 (100%)	128 (100%)	128 (100%)	384	100%

Table 3 indicates that 54.43% of respondents had tertiary education, while 4.43% had no formal education. P-value = 0.725.

Table IV Respondents' Marital Status By Villages

Marital Status	Amawom (n/%)	Umuororonjo (n/%)	Umuonyeche (n/%)	Total (n)	Total (%)
Single	45 (35.16%)	50 (39.06%)	40 (31.25%)	135	35.16%
Married	59 (46.09%)	60 (46.88%)	67 (52.34%)	186	48.44%
Divorced	8 (6.25%)	5 (3.91%)	9 (7.03%)	22	5.73%
Widowed	12 (9.38%)	8 (6.25%)	5 (3.91%)	25	6.51%
Separated	4 (3.13%)	5 (3.91%)	7 (5.47%)	16	4.17%
Total	128 (100%)	128 (100%)	128 (100%)	384	100%

Table 4 presents respondents' marital status. The majority (48.44%) were married, followed by single individuals (35.16%). P-value = 0.565.

Table V Respondents' Occupation by Villages

Occupation	Amawom (n/%)	Umuororonjo (n/%)	Umuonyeche (n/%)	Total (n)	Total (%)
Civil Service	24 (18.75%)	30 (23.44%)	25 (19.53%)	79	20.57%
Health Worker	13 (10.16%)	10 (7.81%)	15 (11.72%)	38	9.90%
Trading	48 (37.5%)	40 (31.25%)	42 (32.81%)	130	33.85%
Farming	12 (9.38%)	5 (3.91%)	4 (3.13%)	21	5.47%
Student	23 (17.97%)	25 (19.53%)	17 (13.28%)	65	16.93%
Artisan	8 (6.25%)	18 (14.06%)	25 (19.53%)	51	13.28%
Total	128 (100%)	128 (100%)	128 (100%)	384	100%

Table 5 highlights respondents' occupations. Trading (33.85%) was the most common, while farming (5.47%) was the least. P-value = 0.052.

Table VI Respondents' Religion by Villages

Religion	Amawom (n/%)	Umuororonjo (n/%)	Umuonyeche (n/%)	Total (n)	Total (%)
Christianity	111 (86.72%)	100 (78.13%)	110 (85.94%)	321	83.59%
Islam	2 (1.56%)	1 (0.78%)	0 (0%)	3	0.78%
Traditionalist	9 (7.03%)	15 (11.72%)	10 (7.81%)	34	8.85%
Atheist	6 (4.69%)	12 (9.38%)	8 (6.25%)	26	6.77%
Total	128 (100%)	128 (100%)	128 (100%)	384	100%

Table 6 shows religious distribution. Christianity (83.59%) was predominant, while Islam (0.78%) was least

represented. P-value = 0.018.

Table VII Respondents' Place Of Residence

Place of Residence	Amawom (n/%)	Umuororonjo (n/%)	Umuonyeche (n/%)	Total (n)	Total (%)
Amawom	128 (100%)	0 (0%)	0 (0%)	128	33.33%
Umuororonjo	0 (0%)	128 (100%)	0 (0%)	128	33.33%
Umuonyeche	0 (0%)	0 (0%)	128 (100%)	128	33.33%
Total	128 (100%)	128 (100%)	128 (100%)	384	100%

DISCUSSION

Socio-Demographic Characteristics

The age distribution of respondents indicates a balanced representation across various age groups, with the highest proportion, 66 respondents (17.19%), aged 61 years and above. This suggests that older adults were actively involved in the study and may have a significant influence on community-related activities such as environmental sanitation. The notable proportion of young adults, especially those aged 19–25 years (16.92%) and 26–32 years (16.41%), highlights the presence of a potentially energetic and active population that could be mobilized for sanitation exercises. Conversely, the low representation of respondents below 18 years (7.03%) may be attributed to the study's focus on adult participants or their limited involvement in household decision-making processes related to sanitation(Prüss-Üstün et al., 2021). According to a study by Olawuni and Daramola (2017), similar findings were recorded where respondents below 18 years were the least represented (p = 0.53).

Regarding sex distribution, the predominance of male respondents (55.73%) suggests a possible gendered dimension in participation, with men being more available or willing to engage in public discussions or community-based studies. A breakdown across the study locations shows that men were the majority in Amawom and Umuonyeche, while Umuororonjo recorded a higher number of female respondents (60.94%). This could reflect local gender roles, where men may be more involved in public engagement, while women focus on household-related activities (Rogawski et al ., 2020). This imbalance may also affect participation levels in monthly environmental sanitation exercises, as men and women may have differing roles and perceptions regarding sanitation practices (p = 0.00000429). This aligns with findings by Olawuni and Daramola (2017), which showed that environmental sanitation behavior is influenced by residential characteristics such as place of residence, gender, and educational attainment.

Educational attainment is a critical factor shaping perceptions and practices around sanitation. The high level of tertiary education among respondents (54.43%) suggests that most of the study population is well-educated and likely aware of the health implications of poor sanitation. Secondary education followed with 117 respondents (30.47%), while 41 respondents (10.68%) had only primary education. The relatively low proportion of respondents with no formal education (4.43%) highlights a community with significant access to education, although targeted interventions may still be needed for this subgroup to improve their understanding and engagement in sanitation activities(Otu, 2015). This finding aligns with Daramola and Olowoporoku (2016), who explored residents' environmental sanitation behavior in a Nigerian metropolis.

In terms of marital status, nearly half of the respondents (48.44%) were married, indicating that family units form a substantial part of the community structure. Married individuals may have a greater stake in maintaining a clean environment to protect their families' health. In contrast, single respondents (35.16%) may be less involved in household-level sanitation efforts. Widowed, divorced, and separated respondents together accounted for 16.41%, suggesting a need for inclusive community interventions addressing the unique challenges faced by these groups. This result is consistent with Dauda et al. (2020), who investigated the relationship between urban health dynamics and demographic variables in Nigeria.

The occupational distribution shows that trading is the most common occupation (33.85%), followed by civil service (20.57%) and students (16.93%). Traders may face challenges in participating in scheduled sanitation exercises due to their economic activities, while civil servants and students, with more structured schedules, may find it easier to participate.

Religion plays a significant role in social and cultural organization. The dominance of Christianity (83.59%), followed by Traditionalist beliefs (8.85%), reflects the religious composition of the region, which can influence community mobilization for sanitation exercises. Faith-based organizations could be key partners in promoting and sustaining sanitation initiatives. The low representation of Muslims (0.78%) and atheists (6.77%) suggests a need for culturally inclusive strategies to ensure all groups are involved in sanitation efforts.

Finally, the even distribution of respondents across the three villages—Amawom, Umuororonjo, and Umuonyeche—with 128 respondents (33.33%) selected from each, ensures a balanced representation, minimizing bias and providing a comprehensive view of the socio-demographic landscape.

CONCLUSION

This study explored the factors and conditions influencing the practice of monthly environmental sanitation exercises among residents of Owerri Municipal LGA, Imo State, Nigeria. The findings revealed that socio-demographic characteristics, including age, marital status, education, and occupation, significantly influenced residents' participation in sanitation exercises. Younger residents and those with lower educational attainment were less likely to participate actively compared to older and more educated residents.

RECOMMENDATIONS

To enhance participation in environmental sanitation exercises, the government and relevant stakeholders should implement the following:

Strengthen Public Awareness Campaigns

Improve Community Mobilization

Enhance Infrastructure and Waste Management Services

Policy Enforcement

ACKNOWLEDGMENT

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