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PUBLIC ENVIRONMENTAL AWARENESS CAMPAIGNS AND RESIDENTS' ENVIRONMENTAL PRACTICES IN ASABA, DELTA STATE

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Abstract

This study examined the effectiveness of public environmental awareness campaigns and residents' environmental practices in Asaba, Delta State, Nigeria. The study was motivated by the persistence of environmental challenges such as indiscriminate waste disposal, poor sanitation, and environmental degradation despite numerous awareness campaigns and environmental education initiatives. Anchored on the Theory of Planned Behaviour, the study investigated the environmental awareness activities available to residents and assessed their effectiveness in influencing environmental knowledge, attitudes, and practices. A descriptive cross-sectional survey design was adopted, and data were collected from 384 adult residents using a structured questionnaire. Data were analysed using frequencies, percentages, weighted awareness indices, and mean scores. Findings revealed that public sanitation exercises and campaigns (71.1%), radio and television programmes (58.1%), and social media environmental messages (53.9%) were the most recognised awareness activities among residents. The results further showed that environmental awareness campaigns were effective in improving environmental knowledge, enhancing understanding of proper waste disposal, and promoting positive attitudes towards environmental sanitation, with a grand mean score of 2.85. However, the study found lower levels of participation in recycling, waste separation, and other practical environmental actions, indicating a gap between environmental awareness and actual behaviour. The study concludes that while environmental awareness campaigns have succeeded in creating environmental consciousness among residents, their capacity to generate sustained environmental practices remains limited. The study recommends more participatory, community-driven, and behaviour-focused environmental communication strategies supported by adequate environmental management infrastructure.

Keywords: *Environmental Awareness, Environmental Communication, Environmental Practices, Environmental Education, Waste Management, Environmental Sustainability.*

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Introduction

Environmental sustainability has increasingly become a major concern across the world as the consequences of environmental degradation continue to threaten public health, economic development, and the overall quality of life. Rapid urbanisation, industrialisation, population growth, and unsustainable human activities have contributed to rising environmental challenges such as improper waste disposal, air and water pollution, flooding, deforestation, soil degradation, indiscriminate burning of refuse, and poor sanitation practices (Uba et al., 2023). These environmental problems have persisted despite government policies, regulatory interventions, environmental education efforts, and various public enlightenment campaigns aimed at promoting environmental responsibility among citizens. Consequently, the issue is no longer whether environmental problems exist, but whether the numerous awareness activities and interventions designed to address them are producing the desired behavioural outcomes among residents.

The growing attention devoted to environmental awareness reflects a recognition that many environmental problems are fundamentally behavioural in nature. Environmental degradation is often linked to individual and collective actions, including indiscriminate refuse disposal, poor sanitation habits, wasteful consumption patterns, and inadequate participation in environmental protection initiatives. As a result, Obukoadata et al (2024) posit that governments, environmental agencies, community organisations, educational institutions, and media organisations have increasingly embraced environmental awareness as a strategic tool for influencing public attitudes and encouraging environmentally responsible behaviour. Chukumah (2020) argues that variations in environmental awareness among stakeholders in Southern Nigeria underscore the importance of environmental education and public enlightenment as critical interventions for addressing environmental challenges.

Over the years, considerable efforts have been made to promote environmental awareness in Nigeria. These efforts have taken various forms, including monthly environmental sanitation exercises, door-to-door sensitisation campaigns, radio and television enlightenment programmes, community mobilisation activities, environmental rallies, social media advocacy campaigns, school-based environmental education programmes, and neighbourhood clean-up exercises. Environmental awareness activities have become regular features of environmental governance and public health campaigns in many Nigerian states, including Delta State. The assumption underlying these interventions is that increased awareness will improve environmental knowledge, foster positive attitudes, and ultimately encourage environmentally responsible behaviour among citizens. Obiagua et al. (2024) support this position by demonstrating that participation in environmental education programmes contributes positively to environmental knowledge and pro-environmental behaviour, highlighting the value of structured awareness initiatives in promoting environmental responsibility.However, while the implementation of environmental

awareness activities has received considerable attention, questions remain regarding their effectiveness in achieving lasting behavioural change. Evidence from existing studies suggests that awareness creation does not automatically translate into environmentally responsible actions. For instance, although environmental campaigns may increase knowledge of environmental issues, individuals may still engage in indiscriminate waste disposal, fail to participate in sanitation activities, or neglect environmentally sustainable practices. This introduces an important gap in environmental communication research: awareness may be present, yet environmental problems persist. Consequently, understanding whether residents are merely aware of environmental messages or are actually influenced by them has become an important area of inquiry. Existing scholarship provides useful insights into this concern. Abdulazeez et al. (2024), in their study of awareness and perception of media campaigns on environmental sustainability in Benin City, found disparities in public awareness and preferences for environmental communication channels. Their findings showed that some communication platforms were more effective than others in reaching audiences, suggesting that awareness activities may not influence all categories of residents equally. Similarly, Adekola et al. (2021), in their investigation of public perception and awareness of waste management in Benin City, reported low levels of awareness concerning indiscriminate waste dumping despite the existence of environmental management initiatives. The researchers emphasised the need to integrate environmental awareness with broader environmental management strategies, including infrastructure provision and regulatory enforcement.

Further evidence suggests that environmental awareness and environmental behaviour do not always correspond. Ojedokun et al. (2022), applying the Theory of Planned Behaviour to littering prevention behaviour in Nigeria, found that positive environmental intentions do not necessarily guarantee actual environmental practices, as behaviour is often shaped by social influences and the practical conditions within which individuals operate. Likewise, Obiagua et al. (2024) observed that although environmental education improved environmental knowledge and pro-environmental beliefs among Nigerian pre-service teachers, the resulting behavioural changes were relatively modest. These findings suggest that exposure to environmental information alone may not be sufficient to produce substantial behavioural transformation.

Recent studies have further reinforced this concern. Ekwesarannaa et al. (2025), in agreement with the views of Obukoadata (2008) on the place of indigenous knowledge systems and management directed at societal growth, demonstrated that environmental knowledge and environmental values contribute significantly to environmental consciousness and pro-environmental behaviour among Nigerian undergraduates, yet participation in organised environmental activities remained limited. Similarly, Onyike (2025) highlighted the positive role of environmental education and awareness

campaigns in fostering behavioural change among Nigerians while noting challenges that limit sustained environmental commitment. These studies collectively suggest that while environmental awareness activities contribute to knowledge acquisition, their effectiveness in driving long-term environmental practices remains uncertain and context-dependent. Within Delta State, the need to understand this relationship is particularly important. Asaba, the state capital, continues to experience rapid population growth, urban expansion, increased commercial activities, and mounting pressure on municipal waste management systems. Environmental concerns such as indiscriminate refuse disposal, blocked drainage channels, open burning of waste, and poor sanitation practices remain visible despite various environmental awareness initiatives implemented by government agencies and other stakeholders. Earlier studies have examined environmental awareness, waste management practices, environmental education, and sanitation behaviours in different contexts; however, limited attention has been devoted to evaluating the effectiveness of the diverse environmental awareness activities currently available to residents of Asaba. Chukumah (2020) further noted variations in environmental awareness across demographic and occupational categories, suggesting that residents do not experience or respond to environmental awareness initiatives uniformly.

This gap creates an important research need. While previous studies (Adekola et al., 2021; Chukwumah, 2020; Obukoadata et al., 2021) have largely focused on environmental knowledge, waste management practices, or specific environmental education interventions, less attention has been given to understanding the extent to which existing environmental awareness activities actually influence residents' environmental knowledge, attitudes, and practices. There is therefore a need to move beyond simply documenting the existence of environmental campaigns and examine whether such initiatives are genuinely effective from the perspective of residents who are expected to benefit from them.

It is against this backdrop that this study examines the effectiveness of existing environmental awareness activities among residents of Asaba, Delta State. Specifically, the study seeks to identify the environmental awareness activities available to residents, assess their level of exposure to these activities, evaluate their effectiveness in influencing environmental knowledge, attitudes and practices, and determine the factors that may limit their effectiveness. In doing so, the study responds to the concerns raised by Chukumah (2020), Adekola et al. (2021), Ojedokun et al. (2022), Obiagua et al. (2024), Abdulazeez et al. (2024), and Ekwesarannaa et al. (2025), while contributing empirical evidence on whether the numerous environmental awareness interventions implemented within Asaba are translating into meaningful environmental responsibility and sustainable behavioural change.

The study is thus driven by the primary need to assess the effectiveness of existing environmental awareness activities among residents of Asaba, Delta State. Specifically, among other things:

1. Identify the existing environmental awareness activities available to residents of Asaba.
2. Assess the effectiveness of these activities in influencing residents' environmental knowledge, attitudes and practices.

Theoretical and Conceptual Framework

This study is anchored on the Theory of Planned Behaviour (TPB) developed by Ajzen (1991). The theory explains how an individual's behaviour is influenced by behavioural intention, which is determined by three major factors: attitude towards the behaviour, subjective norms and perceived behavioural control. Attitude refers to an individual's positive or negative evaluation of a particular behaviour, subjective norms represent the social pressure an individual experiences from family, friends and the wider community, while perceived behavioural control concerns an individual's belief about how easy or difficult it is to perform the behaviour. According to the theory, individuals are more likely to engage in a particular behaviour when they have a favourable attitude towards it, perceive social support for it and believe they have the ability and opportunity to perform it.

The Theory of Planned Behaviour is relevant to this study because environmental awareness activities are intended to influence residents' understanding, attitudes and actions towards environmental protection. Public enlightenment campaigns, sanitation exercises, media programmes and community meetings can improve residents' knowledge and encourage positive attitudes towards proper waste disposal and environmental cleanliness. However, residents' ability to practise these behaviours may also depend on social expectations and the availability of facilities such as waste collection points and disposal services. The theory therefore provides a suitable framework for understanding how environmental awareness activities can influence residents' willingness to adopt responsible environmental practices and the factors that may encourage or limit their participation in maintaining a clean environment.

Environmental awareness refers to the level of understanding individuals possess concerning environmental conditions, environmental problems, their causes, consequences and the actions required to protect the natural environment. It involves the ability to recognise environmental challenges and appreciate the importance of individual and collective responsibility in maintaining environmental quality. Environmental awareness also includes knowledge of appropriate sanitation practices, waste management, pollution prevention, resource conservation and environmental regulations. Ekwesarannaa *et al*. (2025), in their study of environmental education and pro-environmental behaviour among Nigerian undergraduates, examined the relationship between environmental knowledge, environmental values and actual environmental behaviour. Their findings showed that environmental

consciousness and environmental values are important considerations in understanding how individuals relate to their natural surroundings.

Environmental awareness activities are organised programmes, campaigns and communication efforts designed to educate members of the public about environmental issues and encourage responsible environmental behaviour. These activities provide opportunities for residents to obtain information about environmental hazards, sanitation requirements, waste management practices and the importance of protecting natural resources. They may be implemented through public enlightenment campaigns, environmental education, community meetings, radio and television programmes, social media communication, environmental rallies, school programmes and organised sanitation exercises. Abdulazeez *et al*. (2024), in their study of awareness and perception of media campaigns on environmental sustainability in Benin City, examined residents' awareness, preferences and perceptions of environmental sustainability campaigns. Their findings identified gaps in campaign awareness and showed that traditional media remained preferred channels for receiving environmental information.

Public enlightenment campaigns constitute an important environmental awareness strategy because they enable government agencies and other stakeholders to communicate environmental information to a large population (Obukoadata et al., 2021). Such campaigns may provide information on proper waste disposal, drainage maintenance, sanitation requirements, pollution prevention and compliance with environmental regulations. Their effectiveness may depend on the frequency of communication, accessibility of messages, language used and credibility of the information source. Abdulazeez *et al*. (2024) identified the importance of communication channels and residents' perceptions in determining responses to environmental sustainability campaigns, indicating that the choice of communication methods is an important consideration in environmental awareness programmes.

The effectiveness of environmental awareness activities refers to the extent to which organised environmental education, communication and sensitisation programmes achieve their intended objectives. These objectives may include improving residents' environmental knowledge, developing positive attitudes, increasing participation in environmental activities and encouraging responsible environmental practices (Onyike, 2025). An effective awareness programme should not only communicate information but should also enable residents to understand environmental problems and apply the knowledge acquired in their daily activities. Ekwesarannaa *et al*. (2025) observed that environmental knowledge and values were relevant to environmental behaviour among Nigerian undergraduates, although participation in organised environmental activities remained limited.

Empirical studies have examined the relationship between environmental awareness, public education and

environmental behaviour in Nigeria. Adekola *et al*. (2021) investigated public perception and awareness of waste management in Benin City, Edo State, using a survey of 2,720 residents selected from different residential zones. The study found low levels of awareness regarding indiscriminate waste dumping and emphasised the importance of integrating public awareness, infrastructure, urban planning and regulatory enforcement into waste management strategies. The study is relevant to the present research because Benin City shares a regional context with Asaba, and its findings demonstrate the importance of assessing residents' awareness alongside the availability of environmental management services.

Similarly, Ojedokun *et al*. (2022) examined littering prevention behaviour among Nigerian residents using the Theory of Planned Behaviour. The researchers collected cross-sectional questionnaire data and analysed the relationships between attitudes, social norms, perceived behavioural control, behavioural intention and littering prevention. Their findings showed that intention to prevent littering was associated with actual prevention behaviour, while perceived behavioural control influenced the intention to prevent littering. This indicates that environmental awareness initiatives should not only communicate the dangers of poor environmental practices but should also encourage positive attitudes and provide conditions that make responsible behaviour possible.

Obiagua *et al*. (2024) investigated the role of environmental education in promoting environmental knowledge, pro-environmental beliefs and behaviours among Nigerian pre-service teachers. The study compared participants who undertook an environmental education course with those who did not. The findings showed that participants who received environmental education had higher environmental knowledge and pro-environmental behaviour, although the differences were small and not statistically significant. The researchers recommended environmental education approaches that promote personal environmental responsibility and environmental citizenship. This study demonstrates the value of environmental education while also suggesting that exposure to environmental information alone may not guarantee substantial behavioural change.

The reviewed literature establishes that environmental awareness activities can contribute to environmental knowledge and responsible attitudes, but their influence on actual practices may be affected by social and practical conditions. Existing Nigerian studies have examined waste management awareness, littering prevention and environmental education, but there is still a need to examine how residents of Asaba encounter existing environmental awareness activities and how effective they consider these activities in influencing their environmental knowledge, attitudes and practices. This study addresses that need by identifying the awareness activities available to residents and assessing their perceived effectiveness. The findings are expected to provide useful evidence for improving environmental enlightenment and encouraging greater community

participation in environmental protection.

Methodology This study adopted a descriptive cross-sectional survey design to examine the effectiveness of existing environmental awareness activities among residents of Asaba, Delta State. The choice of the design was informed by its suitability for obtaining data from a relatively large population at a single point in time and for assessing residents' perceptions, experiences, levels of exposure, and responses to environmental awareness initiatives. The study population comprised all adult residents (18 years and above) living within Asaba metropolis, irrespective of gender, educational background, occupation, ethnicity, or residential location. Adult residents were considered appropriate for the study because they are direct beneficiaries and participants in environmental awareness activities such as public sanitation exercises, community environmental campaigns, media enlightenment programmes, and other environmental education initiatives implemented within the city. A sample size of 384 respondents was determined using the Krejcie and Morgan sample size determination approach for large populations and was considered adequate for generating representative data. To ensure broad representation of residents across the metropolis, a multistage sampling technique was employed. In the first stage, major residential districts within Asaba were identified and stratified. In the second stage, selected communities and neighbourhoods were randomly chosen from the identified residential districts. The final stage involved the systematic selection of eligible adult residents within the sampled communities for questionnaire administration. This procedure ensured that residents from different socio-economic and residential backgrounds were adequately represented in the study. Data for the study were collected using a structured questionnaire developed in line with the objectives of the research and the propositions of the Theory of Planned Behaviour. The instrument examined residents' awareness of and exposure to existing environmental awareness activities; respondents' perceptions regarding the effectiveness of these activities in influencing environmental knowledge, attitudes, and environmental practices within Asaba. The questionnaire contained a combination of multiple-choice items and four-point Likert-scale statements ranging from Strongly Agree (4) to Strongly Disagree (1).To ensure the quality of the instrument, the questionnaire was subjected to face and content validity by experts in environmental communication, mass communication, and research methodology. Their observations and recommendations guided the refinement of the instrument before final administration. A pilot test was also conducted among residents outside the study area to ascertain the clarity, comprehensibility, and reliability of the instrument. Necessary adjustments were subsequently made based on the outcome of the pilot study.

Data collected were coded and analysed using descriptive statistical techniques, including frequencies, percentages, mean scores, and grand mean values. Frequencies and percentages were used to describe respondents' demographic characteristics and levels of exposure to environmental awareness activities, while mean and grand mean scores were used to assess the perceived effectiveness of environmental awareness programmes. A decision benchmark of 2.50 was adopted for interpreting Likert-scale responses, with mean values equal to or above 2.50 regarded as indicative of agreement, and mean values below 2.50 regarded as disagreement. The results were presented in tables and interpreted in line with the study objectives.

Results and Discussions

A total of 384 respondents were considered for the analysis.

Table 1: Demographic Characteristics of Respondents (N = 384)

Variable	Category	Frequency	Percentage (%)
Gender	Male	177	46.1
	Female	207	53.9
	Total	**384**	**100.0**
Age	18–25 years	81	21.1
	26–35 years	131	34.1
	36–45 years	98	25.5
	46 years and above	74	19.3
	Total	**384**	**100.0**
Educational Qualification	No Formal Education	38	9.9
	Primary Education	38	9.9
	Secondary Education	104	27.1
	Tertiary Education	204	53.1
	Total	**384**	**100.0**
Occupation	Civil/Public Servant	81	21.1
	Private-Sector Employee	92	24.0
	Self-Employed/Business	108	28.1
	Student	65	16.9
	Unemployed	38	9.9
	Total	**384**	**100.0**

Source: *Survey Data, 2026.*

Table 1 presents the demographic profile of the 384 respondents who participated in the study on the effectiveness of environmental awareness activities among residents of Asaba, Delta State. The demographic composition demonstrates that the study captured a wide spectrum of residents whose experiences, exposure levels, and environmental practices are relevant to understanding the effectiveness of environmental

awareness initiatives in the metropolis.

With respect to gender, females constituted a slight majority of the respondents with 207 respondents (53.9%), while males accounted for 177 respondents (46.1%). The near-balanced gender distribution suggests that the findings reflect the perspectives of both men and women regarding environmental awareness activities. This is important because environmental sanitation, waste management, and participation in environmental campaigns are activities that involve both genders within households and communities. The relatively equal representation therefore enhances the credibility of the study in assessing residents' awareness, attitudes, and environmental practices.

The age distribution indicates that the largest proportion of respondents (34.1%) fell within the 26–35 years age category, followed by respondents aged 36–45 years (25.5%). Collectively, these economically active groups accounted for 59.6% of the respondents. Respondents aged 18–25 years represented 21.1%, while those aged 46 years and above constituted 19.3%. This pattern suggests that the study was dominated by mature adults who are actively engaged in social, economic, and community activities and are more likely to encounter environmental awareness programmes through workplaces, media platforms, community associations, and government campaigns. The broad age representation further implies that the assessment of environmental awareness activities reflects the experiences of residents across different generations.

The educational profile of the respondents reveals a relatively high literacy level. More than half of the respondents (53.1%) possessed tertiary education, while 27.1% had secondary education. Combined, respondents with secondary and tertiary education accounted for 80.2% of the sample. In contrast, only 19.8% had primary education or no formal education. This finding is particularly significant to the study because education plays an important role in shaping environmental knowledge, awareness, and responsiveness to environmental campaigns. The predominance of educated respondents suggests that participants were capable of understanding environmental messages and evaluating the effectiveness of awareness activities. At the same time, the inclusion of respondents with lower educational attainment ensured that the study captured the experiences of residents who may face challenges in accessing or interpreting environmental information.

The occupational distribution further demonstrates the inclusiveness of the sample. Self-employed persons and business owners constituted the largest category (28.1%), followed by private-sector employees (24.0%) and civil/public servants (21.1%). Together, these groups represented 73.2% of all respondents. Students accounted for 16.9%, while unemployed respondents constituted 9.9%. This occupational

diversity is important because environmental awareness activities in Asaba target multiple segments of society, including traders, workers, business operators, students, and residents. The distribution therefore provides a broad perspective on how different socioeconomic groups encounter environmental campaigns and adopt environmentally responsible practices.

Invariably, the demographic characteristics indicate that the study drew respondents from diverse gender, age, educational, and occupational backgrounds. This diversity strengthens the validity of the findings and suggests that the assessment of environmental awareness activities reflects the experiences of a representative cross-section of Asaba residents. More importantly, the dominance of economically active and relatively educated respondents provides a useful basis for evaluating whether existing environmental awareness activities are effective in influencing environmental knowledge, attitudes, and practices, which constitute the central objectives of the study.

Table 2: Existing Environmental Awareness Activities Available to Residents of Asaba (Weighted Awareness Analysis)

Environmental Awareness Activity	Frequency	Percentage (%)	Weighted Awareness Score (Percentage/100 × 4)	Rank
Public sanitation exercises and campaigns	273	71.1	2.84	1st
Radio and television environmental programmes	223	58.1	2.32	2nd
Social media environmental messages	207	53.9	2.16	3rd
Community meetings and public enlightenment	142	37.0	1.48	4th
School-based environmental education and outreach	117	30.5	1.22	5th
Posters, banners and public notices	109	28.4	1.14	6th
Aggregate Mean Awareness Index			**1.86**	

Source: *Survey Data, 2026.*

Decision Benchmark:

0.00-1.49 = Low Awareness Presence 1.50-2.49 = Moderate Awareness Presence

2.50-4.00 = High Awareness Presence

The findings presented in Table 2 provide valuable insights into the, which was to identify the environmental awareness activities available to residents of Asaba. A holistic assessment of the data reveals that environmental awareness efforts are not absent within the metropolis. Rather, the findings suggest that environmental information is being communicated through multiple channels, although the visibility and reach of these channels vary considerably.

A notable pattern emerging from the data is the dominance of public sanitation exercises and campaigns, which recorded the highest awareness level with a frequency of 273 respondents, representing 71.1 per cent of the sample and a weighted awareness score of 2.84. This score falls within the high-awareness category and indicates that public sanitation campaigns constitute the most visible environmental intervention among residents. The finding implies that environmental authorities in Asaba have historically relied on physical sanitation activities as a major strategy for promoting environmental consciousness. Monthly sanitation activities, community clean-up campaigns, environmental inspection exercises, and waste evacuation programmes appear to have become institutionalised forms of environmental communication. The prominence of this activity demonstrates that residents are more likely to recognise environmental programmes when they are practical, community-based, and directly connected to their immediate surroundings.

The findings further show that radio and television environmental programmes recorded a weighted score of 2.32, while social media environmental messages achieved a score of 2.16. Although these values fall within the moderate-awareness category, they suggest considerable penetration of media-based environmental communication. Combined, these two channels account for more than half of the respondents, indicating that environmental awareness campaigns in Asaba increasingly depend on mediated communication. The significance of this result lies in the growing role of technology and media in shaping environmental consciousness. Environmental agencies appear to be complementing traditional sanitation campaigns with broadcast and digital communication strategies capable of reaching larger and more diverse audiences.

The result strongly supports the assumptions of Technological Determinism Theory, which argues that communication technologies influence how information is produced, disseminated, and consumed. The substantial recognition recorded for radio, television, and social media demonstrates that environmental awareness is increasingly mediated through communication technologies. The finding suggests that environmental communication in Asaba is evolving from purely physical sensitisation activities toward technology-driven awareness systems capable of engaging residents across different demographic groups.

In contrast, community meetings and public enlightenment programmes produced a relatively low awareness score of 1.48, while school-based environmental education and posters, banners, and public notices recorded scores of 1.22 and 1.14, respectively. The low awareness values associated with these channels suggest that they either occur less frequently or have a more limited audience reach. This finding raises important concerns because interpersonal communication and structured educational interventions are generally regarded as effective mechanisms for fostering deeper understanding and long-term behavioural change. Their relatively weak recognition may indicate missed opportunities for promoting active environmental participation at the grassroots level.

From the perspective of the study objectives, the findings reveal that while environmental awareness activities are present within Asaba, their distribution is uneven. Residents are considerably more familiar with sanitation campaigns and media-oriented environmental messages than with educational or community-centred awareness initiatives. This suggests that environmental communication efforts may be prioritising visibility over participation, a situation that could limit the effectiveness of environmental awareness programmes in achieving sustained behavioural change.

The findings further resonate with the Theory of Planned Behaviour, which maintains that awareness and information contribute to the formation of attitudes and behavioural intentions. The extensive visibility of sanitation campaigns and media programmes suggests that residents have repeated opportunities to acquire environmental information capable of shaping their attitudes toward environmental protection. However, the relatively low awareness of community and educational programmes raises questions about whether residents receive the level of engagement necessary to transform environmental knowledge into consistent environmental practices.

More importantly, the aggregate awareness index of 1.86 indicates that the overall availability of environmental awareness activities in Asaba falls within the moderate category. This finding has profound implications for the study. Despite the existence of multiple environmental awareness interventions, the awareness structure appears to be concentrated around a few dominant channels rather than a comprehensive network of complementary activities. Consequently, while residents can identify major environmental campaigns, there remains room for expanding and diversifying environmental communication strategies to ensure broader reach, deeper engagement, and greater behavioural impact.

The implication for environmental sustainability is that awareness creation in Asaba has achieved visibility but may not yet have attained sufficient depth. For environmental awareness programmes to produce lasting environmental responsibility, greater emphasis may need to be placed on community participation, school-based environmental education, and interactive enlightenment initiatives that move beyond information dissemination to

behavioural transformation. Such an approach would better position environmental awareness activities to achieve the ultimate objective of promoting sustainable environmental practices among residents of Asaba.

Effectiveness of Environmental Awareness Activities

Table 4.3: Respondents' Assessment of the Effectiveness of Environmental Awareness Activities

Statement	SA	A	D	SD	Mean	Decision
Environmental awareness activities have improved my knowledge of environmental sanitation.	131	165	65	23	3.05	Agree
I understand the importance of proper waste disposal because of environmental awareness programmes.	153	150	54	27	3.12	Agree
Environmental campaigns have increased my understanding of the effects of indiscriminate waste disposal.	142	157	60	25	3.08	Agree
Environmental awareness programmes encourage me to separate waste and practise recycling.	87	138	111	48	2.69	Agree
I participate in environmental sanitation activities because of the information I receive.	100	136	94	54	2.73	Agree
I make efforts to avoid indiscriminate dumping of refuse.	159	146	56	23	3.15	Agree
Environmental awareness campaigns are organised frequently enough to reach residents.	59	104	144	77	2.38	Disagree
Environmental awareness messages have encouraged me to maintain good environmental practices.	81	130	117	56	2.61	Agree
Grand Mean					**2.85**	**Agree**

Source: *Survey Data, 2026.*

Table 4.3 sought to determine residents' exposure to environmental awareness activities and assess the effectiveness of these activities in influencing environmental knowledge, attitudes, and environmental practices. The Grand Mean of 2.85, which exceeds the criterion mean of 2.50, indicates that respondents generally perceived existing environmental awareness activities as effective. However, a closer examination of the weighted mean scores reveals important distinctions between awareness creation, attitude formation, and actual behavioural transformation.

The most highly rated statement was "I make efforts to avoid indiscriminate dumping of refuse" with a mean score of 3.15. This was followed closely by "I understand the importance of proper waste disposal because of environmental awareness programmes" (M = 3.12), "Environmental campaigns have increased my understanding of the

effects of indiscriminate waste disposal" (M = 3.08), and "Environmental awareness activities have improved my knowledge of environmental sanitation" (M = 3.05). These high mean values suggest that environmental awareness efforts in Asaba have been particularly successful in generating environmental knowledge and creating awareness of proper sanitation practices.

A weighted analysis of the responses further supports this observation. For example, the first statement recorded 296 respondents (77.1%) in agreement compared to 88 respondents (22.9%) in disagreement. Similarly, 303 respondents (78.9%) agreed that environmental awareness programmes helped them understand the importance of proper waste disposal, while only 81 respondents (21.1%) disagreed. These distributions indicate that environmental messages have successfully penetrated public consciousness and have contributed significantly to residents' understanding of environmental issues.

This finding directly supports the first objective of the study, which sought to examine the effectiveness of existing environmental awareness activities. The consistently high mean scores relating to environmental knowledge suggest that awareness activities are achieving one of their primary communication goals: increasing knowledge and understanding of environmental issues among residents.

Interestingly, the findings reveal a gradual decline in mean values when the focus shifts from knowledge acquisition to behavioural implementation. While respondents strongly agreed that awareness campaigns improved their understanding of sanitation and waste management issues, comparatively lower mean scores were recorded for statements relating to behavioural actions. For example, "Environmental awareness programmes encourage me to separate waste and practise recycling" recorded a mean score of 2.69, while "I participate in environmental sanitation activities because of the information I receive" recorded 2.73.

This distinction is significant because it suggests that awareness programmes are more successful at informing residents than at changing their behaviour. In practical terms, residents appear to know what constitutes environmentally responsible behaviour, yet this knowledge does not always translate into active participation in recycling, sanitation exercises, and other environmentally friendly practices. This finding aligns closely with existing environmental communication literature, which often argues that awareness is a necessary but insufficient condition for behavioural change.

The result strongly resonates with the Theory of Planned Behaviour, which posits that knowledge and attitudes influence intentions, but actual behaviour is also affected by enabling conditions, perceived behavioural control, and social circumstances. The findings suggest that environmental awareness activities have successfully influenced residents' environmental attitudes and intentions; however, factors such as inadequate waste separation facilities, insufficient recycling infrastructure, convenience, and social norms may constrain the

translation of awareness into action.

Another important finding emerges from the statement regarding the frequency of environmental awareness campaigns. Unlike all other statements, "Environmental awareness campaigns are organised frequently enough to reach residents" recorded a mean score of only 2.38, making it the only item rejected by respondents. A closer examination reveals that only 163 respondents (42.4%) agreed with the statement, while 221 respondents (57.6%) disagreed.
This finding introduces a critical dimension to understanding the effectiveness of environmental awareness activities in Asaba. Although residents acknowledge the value and impact of existing awareness programmes, many believe that such activities are not conducted regularly enough. In other words, the challenge may not necessarily be the quality of awareness messages but their consistency and frequency. The implication is that residents desire more sustained environmental engagement rather than sporadic sensitisation campaigns.

This observation also connects strongly with the Agenda-Setting Theory, which posits that issues become important to the public when they receive continuous and repeated attention. The relatively low score regarding campaign frequency suggests that environmental issues may not be receiving sufficient, sustained communication to remain consistently salient in the minds of residents. If environmental awareness messages are delivered only intermittently, their ability to shape long-term attitudes and practices may be weakened.

Furthermore, the finding that environmental awareness messages have encouraged residents to maintain good environmental practices (M = 2.61) suggests moderate effectiveness in behavioural reinforcement. While respondents acknowledge being influenced positively, the mean score is lower than those related to knowledge acquisition, further reinforcing the conclusion that awareness programmes currently perform better as educational tools than as behavioural-change mechanisms.

Holistically, the findings suggest a three-stage outcome. First, environmental awareness activities have achieved substantial success in creating awareness and environmental knowledge. Second, they have had a moderate impact on shaping environmental attitudes and perceptions. Third, they have achieved only partial success in driving consistent environmental practices and behavioural change. This progression mirrors the classical environmental communication model, where awareness typically precedes attitude formation, which in turn precedes actual behaviour.

The implication for the study is that environmental awareness activities in Asaba cannot be regarded as ineffective. On the contrary, the grand mean of 2.85 demonstrates considerable effectiveness in educating residents and promoting environmental consciousness. However, the relatively lower scores on participation, recycling behaviour, and campaign frequency suggest that awareness initiatives need to evolve beyond information

dissemination toward sustained engagement, community participation, and behavioural reinforcement.

The findings indicate that existing environmental awareness activities have been effective in improving residents' environmental knowledge and attitudes, thereby fulfilling a major component of the study objectives. Nevertheless, to achieve meaningful environmental sustainability, environmental communication efforts must move beyond awareness creation and focus increasingly on facilitating practical environmental actions and maintaining continuous engagement with residents

Implications of the Findings

The findings of this study have significant implications for scholarship, environmental communication practice, environmental management policy, and sustainable development discourse. More importantly, the study extends contemporary debates beyond the mere existence of environmental awareness activities to the more critical question of whether such activities are effectively influencing environmental knowledge, attitudes, and practices among residents. This distinction is important because environmental communication literature increasingly argues that awareness alone is not a sufficient indicator of environmental progress. Rather, the ultimate value of awareness activities lies in their capacity to stimulate sustainable behavioural outcomes.

From a scholarly perspective, the findings provide empirical support for the argument that environmental awareness activities contribute significantly to environmental knowledge acquisition among residents. The high recognition of public sanitation exercises (71.1%), radio and television programmes (58.1%), and social media environmental messages (53.9%), coupled with the positive effectiveness score (Grand Mean = 2.85), demonstrates that environmental communication interventions remain important mechanisms for building environmental consciousness. This finding reinforces the positions of Obiagua et al. (2024), Ekwesarannaa et al. (2025), and Onyike (2025), who respectively found that environmental education contributes positively to environmental knowledge, environmental consciousness, environmental values, and commitment to environmental responsibility.However, the study simultaneously introduces a critical qualification to this body of knowledge. While awareness activities were found to improve knowledge and attitudes, their influence on actual environmental practices was less pronounced. This aligns with Obukoadata and Okoi (2025) on the need to be very strategic when it comes to deploying communication for developmental activities. Recycling behaviour, participation in sanitation activities, and perceptions of campaign frequency recorded comparatively lower mean scores than variables measuring environmental understanding. This finding strengthens the arguments of Ojedokun et al. (2022), who found that environmental intentions do not always translate into actual environmental behaviour because behaviour is mediated by social norms and perceived behavioural control. Similarly, Obiagua et al. (2024) Godsgift and Obukoadata (2008) reported that although environmental education improved

environmental knowledge, the resulting changes in behaviour were relatively modest, a conclusion that mirrors the present study's findings. Consequently, this study contributes to scholarship by demonstrating that knowledge acquisition and behavioural transformation should not be treated as synonymous outcomes of environmental awareness. The findings suggest the existence of a persistent awareness-behaviour gap within environmental communication research. This gap provides an important direction for future studies seeking to understand the intervening variables that either facilitate or constrain the transition from environmental knowledge to environmental action.

The study also has significant theoretical implications. The findings strongly validate the assumptions of the Ajzen (1991) Theory of Planned Behaviour. The theory proposes that attitudes, subjective norms, and perceived behavioural control collectively influence behavioural intentions and actual behaviour. The findings reveal that environmental awareness activities were successful in influencing residents' knowledge and attitudes toward environmental sanitation and responsible waste disposal. However, the comparatively lower behavioural scores suggest that awareness alone does not guarantee practice. Factors such as inadequate waste management infrastructure, recycling opportunities, environmental enforcement mechanisms, and social support systems may affect residents' ability to act on their environmental knowledge. Thus, the study extends the explanatory value of the Theory of Planned Behaviour within environmental communication by empirically demonstrating that behavioural change requires both cognitive influence and enabling environmental conditions.

The findings also provide support for communication-centred perspectives advanced by Obukoadata et al. (2024), Abdulazeez et al. (2024) and Obukoadata and Okoi (2025), which emphasize the strategic role of communication channels in shaping awareness, participation, and public engagement. The dominance of sanitation campaigns, broadcast media, and social media suggests that environmental communication effectiveness is partly determined by the accessibility, visibility, and relevance of communication channels. This finding supports Abdulazeez et al. (2024), who found disparities in residents' awareness and preferences for environmental communication platforms.

Yet, the findings also challenge overly optimistic assumptions that communication exposure alone can drive sustainability outcomes. The results differ somewhat from studies that assume awareness campaigns automatically generate behavioural change. For example, while Onyike (2025) reported positive contributions of environmental education to behavioural commitment, the present study suggests that sustained commitment may depend more on campaign frequency, institutional support, and practical environmental opportunities than on awareness alone. This does not invalidate existing scholarship; rather, it clarifies that environmental awareness may be necessary but insufficient for long-term behavioural transformation.

In terms of environmental management, the findings suggest that authorities in Asaba and similar urban centres should reconsider the traditional assumption that awareness campaigns alone can solve environmental problems. The prominence of public sanitation campaigns indicates that environmental agencies have achieved substantial visibility among residents. However, the lower ratings associated with recycling practices and campaign frequency indicate that environmental management strategies must increasingly integrate communication interventions with practical service delivery systems. This observation is consistent with Adekola et al. (2021), who argued that environmental awareness should be integrated with infrastructure provision, urban planning, and regulatory enforcement.

The findings are also highly relevant to contemporary waste management discourse in Nigeria. Adegboye (2025) and Osotuyi et al. (2025) emphasize the importance of waste segregation as a critical component of sustainable waste management systems. Yet the present study found only moderate support for waste separation and recycling behaviours among respondents. This suggests that environmental communication in Asaba has not yet sufficiently progressed from awareness-level messaging to behaviour-specific environmental action programmes. The implication is that future environmental campaigns must place greater emphasis on practical demonstrations, recycling incentives, source segregation systems, and community-level waste recovery initiatives.

Similarly, the findings support the participatory perspectives advanced by Kingsley and Jude (2023) and Oyamo et al. (2025), who advocate community-based environmental stewardship models. The relatively low awareness scores associated with community meetings and school-based environmental programmes suggest that participatory approaches remain underutilised within the current environmental communication structure. This finding implies that sustainable environmental management may require a shift from highly centralised awareness campaigns toward more community-driven environmental engagement systems.The study further contributes to environmental communication scholarship by providing empirical evidence from Delta State, a context where previous studies such as Chukumah (2020), Adekola et al. (2021) and Iwegbu et al. (2026) identified disparities in environmental awareness, waste disposal knowledge, and environmental participation. The present findings confirm these disparities while also demonstrating that awareness programmes can be effective when they are visible, accessible, and sustained. At the same time, they highlight the continuing challenge of converting awareness into routine environmental behaviour.In all, the study advances the field by demonstrating that environmental awareness activities in Asaba have succeeded in creating environmental consciousness but have been less successful in institutionalising consistent pro-environmental behaviour. The findings therefore reposition environmental communication from a knowledge-transmission perspective to a behavioural transformation perspective. In doing so, they provide a more nuanced understanding of how awareness activities interact with communication systems, social realities, infrastructural conditions, and environmental governance processes to shape residents' environmental practices. Ultimately, the study argues that sustainable environmental management will be achieved not merely through more awareness campaigns, but through the strategic integration of environmental communication, community participation, behavioural reinforcement mechanisms, waste management infrastructure, and supportive policy interventions.

Conclusion

This study set out to assess the effectiveness of public environmental awareness campaigns and residents' environmental practices in Asaba, Delta State, against the backdrop of a persistent paradox in environmental management: despite sustained environmental education initiatives, sanitation exercises, media campaigns, public enlightenment programmes, and government interventions, environmental challenges such as indiscriminate waste disposal, blocked drainage systems, poor sanitation practices, and environmental degradation continue to persist in many urban communities. The central question, therefore, was not whether environmental awareness activities exist, but whether they are sufficiently effective in influencing environmental knowledge, attitudes, and practices among residents.

The findings demonstrate that environmental awareness activities have become an established feature of

environmental governance and communication in Asaba. Public sanitation exercises, radio and television programmes, and social media campaigns emerged as the most visible forms of environmental awareness interventions available to residents, suggesting that government agencies and environmental stakeholders have invested considerable effort in communicating environmental messages to the public. The prominence of these channels indicates that environmental communication has achieved substantial visibility and penetration within the study area.

More importantly, the study establishes that these awareness activities are producing meaningful outcomes in terms of environmental knowledge and attitudinal orientation. Residents generally demonstrated a sound understanding of environmental sanitation, responsible waste disposal, and the consequences of indiscriminate environmental practices. The overall effectiveness rating confirms that awareness campaigns have succeeded in improving environmental consciousness and fostering positive attitudes toward environmental protection. In this regard, the study validates the position of scholars such as Obiagua et al., Ekwesarannaa et al., and Onyike, who argue that environmental education and awareness initiatives play an important role in developing environmental knowledge, values, and commitment toward sustainability.

However, the study also reveals that environmental awareness does not automatically translate into consistent environmental action. While respondents displayed substantial environmental knowledge, comparatively lower levels were recorded in behaviours relating to waste separation, recycling, and active participation in environmental activities. This confirms the long-standing argument in environmental communication scholarship that knowledge acquisition and behavioural transformation are not identical processes. The findings therefore support the observations of Ojedokun et al., Adekola et al., and Obiorah and Onwughalu that awareness alone may be insufficient to drive sustained environmental behaviour where practical, social, and infrastructural constraints remain unresolved.

The study consequently affirms the explanatory value of the Theory of Planned Behaviour developed by Ajzen. The findings show that environmental awareness activities have successfully influenced attitudes and behavioural intentions; however, actual behaviour remains dependent on perceived behavioural control, social support systems, and the availability of environmental infrastructure. Residents may understand the importance of environmental stewardship, yet limitations such as inadequate waste collection systems, insufficient recycling facilities, and irregular environmental engagement opportunities may prevent the full translation of awareness into practice.

The study therefore arrives at a broader conclusion: the effectiveness of environmental awareness activities should not be measured merely by message exposure or awareness levels, but by their capacity to produce

sustained environmental citizenship and everyday environmental responsibility. Environmental communication achieves its greatest value when it progresses beyond information dissemination to behavioural enablement. This implies that environmental sustainability is not simply a communication challenge, nor solely an environmental management challenge, but a combined communication-behaviour-governance challenge requiring the integration of awareness campaigns, community participation, environmental infrastructure, and supportive public policies.

Ultimately, this study concludes that public environmental awareness campaigns in Asaba have been successful in creating awareness, improving environmental knowledge, and promoting positive environmental attitudes among residents. Nevertheless, their capacity to generate consistent environmental practices remains constrained by structural and behavioural factors. Consequently, the future success of environmental management in Asaba will depend not only on sustaining awareness campaigns but also on creating the social, institutional, and infrastructural conditions that enable residents to transform environmental knowledge into habitual environmental action. In this sense, the study reinforces the proposition that sustainable environmental development is achieved when awareness evolves into participation, participation develops into responsibility, and responsibility becomes embedded in everyday environmental practice.

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