

## Evaluating the Effectiveness of Media Environmental Campaigns on Solid Waste Disposal Practices in Anambra State, Nigeria

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### Abstract

Solid waste management remains one of the most pressing environmental challenges facing Nigeria, with indiscriminate disposal practices significantly undermining environmental sustainability and public health. This study evaluated the effectiveness of media environmental campaigns on solid waste disposal practices in Anambra State. The study adopted a descriptive survey research design and utilized a quantitative approach. A sample size of 566 respondents was purposively selected from the three major urban centres of Awka, Nnewi, and Onitsha. Data were collected through structured questionnaires and analyzed using frequency distribution tables, percentages, and descriptive statistical techniques. Findings revealed that media environmental campaigns have been largely ineffective in promoting sustainable waste disposal practices. A significant majority of respondents indicated low exposure to consistent media campaigns, while waste management authorities were perceived as failing in their responsibilities for timely collection and proper disposal of solid waste. The study further found a weak relationship between media campaigns and residents' waste disposal behaviour. The study concludes that media environmental campaigns in Anambra State have not sufficiently influenced positive solid waste disposal practices. To address this gap, it recommends intensified, sustained media campaigns, re-introduction of the door-to-door waste collection system, and strengthened collaboration between media organisations and waste management authorities. The study also emphasizes the need for policy reforms aimed at improving environmental communication, public participation, and institutional effectiveness in waste management administration. These measures are critical for achieving behavioural change and environmental sustainability in the state.

**Keywords:** Media environmental campaigns, Solid waste disposal, Waste management practices, Anambra State, Environmental sustainability

## Introduction

Environmental sustainability has become one of the most pressing global concerns of the twenty-first century due to rapid urbanization, industrialization, population growth, and changing consumption patterns. Across both developed and developing countries, the challenge of balancing economic growth with environmental protection has intensified, particularly in relation to waste generation and disposal practices. The United Nations Environment Programme (UNEP, 2024) observed that poor waste management contributes significantly to environmental degradation, climate change, public health crises, and declining urban sanitation standards. In developing countries such as Nigeria, the problem is exacerbated by weak institutional capacity, inadequate infrastructure, and low public compliance with environmental sanitation regulations.

Among the various environmental challenges confronting Nigeria, improper solid waste disposal remains one of the most visible and persistent threats to sustainable development. Rapid urban expansion, increasing population density, and changing consumption patterns have significantly increased the volume of municipal solid waste generated across Nigerian cities. The country generates over 32 million tonnes of municipal solid waste annually, yet only 20–30% is properly collected and disposed of, with the remainder often dumped indiscriminately in streets, drains, waterways, and open spaces (World Bank, 2024; NESREA, 2025). These give rise to indiscriminate dumping on roadsides, drainage channels, open spaces, and water bodies.

The environmental and public health implications of poor solid waste disposal practices are enormous. Improper waste management contributes to flooding, air and water pollution, spread of infectious diseases, blocked drainage systems, and environmental deterioration. In urban centres such as Awka, Onitsha, and Nnewi in Anambra State, indiscriminate waste disposal has become a recurring environmental challenge despite the existence of sanitation laws, environmental policies, and waste management agencies. During the rainy season, heaps of improperly disposed refuse often obstruct drainage systems and contribute to severe flooding in many communities. The Nigerian Environmental Society (2024) reported that inadequate waste management practices continue to undermine urban environmental sustainability and public health across major Nigerian cities.

Successive governments in Nigeria have implemented various environmental policies and institutional frameworks aimed at improving environmental sanitation and waste management. These include the establishment of the Federal Environmental Protection Agency (FEPA) in 1988, the creation of Federal and State Ministries of Environment, the Environmental Impact Assessment Act of 1992, monthly environmental sanitation exercises, and the establishment of state waste management agencies. In Anambra State Waste Management Authority (ASWAMA) was created to oversee waste collection, disposal, and environmental sanitation within the state. Despite these interventions, waste disposal

practices among residents remain largely unsustainable, indicating persistent gaps between environmental policies and public behavioural compliance.

One major strategy adopted by governments and environmental agencies in addressing waste management challenges has been the use of media environmental campaigns. Media campaigns are designed to educate, sensitize, and mobilize the public towards environmentally responsible behaviour through radio, television, newspapers, social media, billboards, and other communication channels. Environmental communication scholars argue that the media plays a critical role in shaping public attitudes, awareness, and behavioural change regarding environmental sustainability issues (Omoera & Adeleke, 2024). Through agenda-setting and public enlightenment functions, the media can influence citizens' environmental consciousness and encourage compliance with proper waste disposal practices. However, despite the increasing use of media campaigns by government agencies and environmental organizations, indiscriminate waste disposal remains prevalent in many Nigerian urban centres, including Anambra State. This raises important questions regarding the effectiveness of media environmental campaigns in influencing public waste disposal behaviour. Although several studies have examined environmental sanitation and waste management practices in Nigeria, many existing studies have focused largely on institutional challenges, waste collection systems, and environmental policies, with limited empirical attention given to the effectiveness of media environmental campaigns in changing public behaviour toward solid waste disposal practices.

Furthermore, most previous studies on waste management in Nigeria have concentrated on larger metropolitan areas such as Lagos, Abuja, and Port Harcourt, while relatively fewer empirical studies have specifically examined the relationship between media environmental campaigns and waste disposal practices in Anambra State. Existing literature also tends to emphasize public awareness generally without critically evaluating whether media campaigns have significantly influenced behavioural compliance with proper waste disposal practices among residents. This constitutes a major gap in the literature that this study seeks to address. It is against this background that this study evaluates the effectiveness of media environmental campaigns on solid waste disposal practices in Anambra State, Nigeria. Specifically, the study investigates the extent to which media environmental campaigns have influenced public awareness, attitudes, and compliance with proper waste disposal practices among residents of Awka, Onitsha, and Nnewi. The study also examines whether existing environmental communication efforts are sufficient in promoting sustainable waste management behaviour within the state.

The significance of this study lies in its contribution to the growing discourse on environmental communication, behavioural change, and sustainable urban development in Nigeria. The findings are expected to provide empirical insights that will assist policymakers, environmental agencies, media organizations, and development practitioners in designing more effective environmental communication strategies capable of improving waste

management practices and promoting environmental sustainability in Anambra State and beyond.

### Objectives of the Study

The broad objective of this study is to evaluate the effectiveness of media environmental campaigns on solid waste disposal practices in Anambra State, Nigeria. The specific objectives are to:

- i. examine the extent to which the Anambra State Government has provided adequate information and public sensitization on proper solid waste disposal practices among residents;
- ii. assess the extent to which media environmental campaigns have influenced positive solid waste disposal practices in Anambra State; and
- iii. evaluate the adequacy of facilities and institutional support provided by the Anambra State Waste Management Authority (ASWAMA) for sustainable solid waste management in Anambra State.

### Research Questions

The following research questions guide this study:

- i. To what extent has the Anambra State Government provided adequate information and public sensitization on proper solid waste disposal practices among residents of Anambra State?
- ii. To what extent have media environmental campaigns influenced positive solid waste disposal practices among residents of Anambra State?
- iii. To what extent has the Anambra State Waste Management Authority (ASWAMA) provided adequate facilities and institutional support for sustainable solid waste management in Anambra State?

### Literature Review

#### *Media environmental campaigns and environmental awareness*

Environmental communication has increasingly become an important strategy for promoting environmental sustainability and influencing public attitudes toward responsible waste management practices. Media environmental campaigns involve the systematic use of communication channels such as radio, television, newspapers, social media, billboards, and community outreach programmes to educate and mobilize citizens toward environmentally responsible behaviour. Scholars argue that the media performs significant agenda-setting and behavioural influence functions by shaping public perceptions and awareness of environmental issues (Asemah & Edegoh, 2021).

Recent studies suggest that environmental awareness campaigns can positively influence public environmental consciousness when they are sustained, participatory, and culturally relevant. Omoera and Adeleke (2024) found that environmental communication campaigns significantly improved environmental awareness among urban residents in South-West

Nigeria, particularly where multimedia platforms were effectively utilized. Similarly, Nwosu and Chukwuemeka (2022) observed that radio and television campaigns contributed to increased public understanding of sanitation regulations in Enugu State, although behavioural compliance remained relatively low due to infrastructural challenges.

However, scholars have questioned the extent to which awareness generated through media campaigns translates into actual behavioural change. While media campaigns may improve knowledge and attitudes, environmental behaviour is often influenced by socioeconomic conditions, availability of waste disposal facilities, government enforcement, and public trust in environmental institutions (Ezeah & Roberts, 2020). In a study conducted in Lagos State, Adekunle et al. (2023) found that although residents were generally aware of proper waste disposal practices through media sensitization, indiscriminate dumping persisted because waste collection systems were irregular and poorly coordinated.

This suggests that environmental communication alone may not be sufficient to guarantee sustainable waste disposal behaviour unless supported by functional waste management infrastructure and effective institutional frameworks. The implication is that media environmental campaigns must be integrated with practical environmental governance strategies capable of facilitating behavioural compliance.

#### *Media campaigns and behavioural change in waste disposal practices*

The relationship between media campaigns and behavioural change has attracted considerable scholarly attention within environmental communication research. Behavioural change theories such as the Health Belief Model, Social Learning Theory, and Agenda-Setting Theory emphasize that repeated exposure to persuasive communication can influence attitudes and behavioural patterns over time (Bandura, 2001). In environmental management, media campaigns are expected to encourage citizens to adopt responsible sanitation habits and discourage indiscriminate waste disposal practices.

Empirical studies, however, present mixed findings regarding the effectiveness of media campaigns in changing waste disposal behaviour. For instance, Chukwu and Ojebode (2021) reported that media campaigns in Abuja significantly increased environmental awareness among urban residents but had only moderate influence on long-term behavioural compliance due to poor monitoring and weak enforcement mechanisms. Similarly, Oyekunle and Ibrahim (2020) found that despite intensive environmental sanitation campaigns in Ibadan, many residents continued to dispose waste improperly because of inadequate waste evacuation services and lack of accessible disposal points.

In contrast, some studies demonstrate positive outcomes where media campaigns are sustained and community-driven. A study by Okeke, Mohammed & Garba (2024) on waste management communication revealed that consistent media sensitization combined with community participation significantly improved residents' compliance with waste sorting and disposal regulations. Likewise, Aina and Salau (2023) found that social media-based

environmental campaigns among young urban populations in Nigeria enhanced participation in recycling and environmental sanitation activities.

The inconsistencies in these findings indicate that the effectiveness of media environmental campaigns is context-dependent. Factors such as literacy level, urban infrastructure, government responsiveness, cultural orientation, and public trust in institutions influence the extent to which media campaigns can effectively alter environmental behaviour. Existing literature therefore suggests the need for localized empirical investigations capable of assessing the effectiveness of environmental campaigns within specific socio-cultural contexts such as Anambra State.

### *Solid waste management practices in Nigeria*

Solid waste management remains one of the major environmental challenges confronting urban centres in Nigeria. Rapid urbanization, population growth, industrialization, and changing consumption patterns have significantly increased the volume and complexity of waste generated across Nigerian cities (United Nations Habitat, 2010). According to the Alamu (2025), Nigeria generates more than 32 million tonnes of municipal solid waste annually, yet a substantial proportion remains uncollected or improperly managed.

Studies consistently identify indiscriminate dumping, poor waste collection systems, inadequate recycling culture, and weak institutional capacity as major impediments to effective waste management in Nigeria. Orhorhoro and Oghoghorie (2019) argue that waste management challenges in Nigeria are largely linked to poor environmental planning, insufficient funding, inadequate infrastructure, and limited public environmental consciousness. Similarly, Iroegbu (2024) observed that the inability of municipal authorities to cope with increasing waste generation has contributed to environmental degradation and public health risks in many Nigerian cities.

In Anambra State, urban centres such as Awka, Onitsha, and Nnewi continue to experience severe waste management problems characterized by overflowing refuse dumps, blocked drainage systems, and indiscriminate waste disposal along roadsides and waterways. Ezenwaji et al. (2022) found that ineffective waste evacuation systems and weak public participation significantly contributed to poor sanitation conditions in Onitsha metropolis. Likewise, Okafor and Udeh (2023) reported that although residents were aware of environmental sanitation regulations, compliance remained low because of inadequate waste collection facilities and irregular refuse disposal services.

These findings support earlier observations by Nigerian Environmental Study/ Action Team (NEST) (1991) and Oyediran (1997) that waste management problems in Nigeria are both infrastructural and behavioural in nature. However, unlike earlier studies that focused predominantly on physical waste management systems, recent scholarship increasingly recognizes the importance of environmental communication and behavioural mobilization in addressing waste management challenges.

### *Institutional capacity and environmental governance*

Another major issue identified in the literature concerns the role of environmental governance institutions in promoting sustainable waste management practices. Effective waste management requires coordinated institutional frameworks capable of ensuring waste collection, enforcement of sanitation regulations, and public environmental education. In Nigeria, agencies responsible for waste management often face operational challenges including inadequate funding, insufficient manpower, poor logistics, and weak enforcement capacity (Afolabi & Akinwale, 2022).

Research indicates that institutional inefficiency significantly undermines public confidence in environmental sanitation policies. In a comparative study of waste management agencies in South-East Nigeria, Ugwu and Nnaji (2021) found that poor coordination between environmental authorities and local communities weakened compliance with sanitation regulations. Similarly, Corporate Accountability and Public Participation Africa (2025) reported that only about 20–30 percent of municipal waste generated in Nigeria is effectively collected, thereby worsening environmental pollution and urban sanitation crises.

These institutional shortcomings limit the effectiveness of media environmental campaigns because citizens may become less responsive to environmental messages when government agencies fail to provide adequate waste disposal infrastructure and services. Thus, behavioural change communication must be complemented by effective environmental governance and accessible waste management systems.

### *Gaps in the literature*

Although existing studies have extensively examined waste management challenges, environmental sanitation, and public awareness campaigns in Nigeria, several gaps remain evident in the literature. First, many previous studies focus primarily on waste management infrastructure, environmental policies, and institutional constraints, with limited empirical attention given to the effectiveness of media environmental campaigns in influencing actual waste disposal behaviour.

Second, existing studies often examine environmental awareness in broad terms without critically assessing whether media campaigns have significantly translated into sustainable behavioural change among urban residents. Third, much of the available research concentrates on major metropolitan centres such as Lagos, Abuja, and Port Harcourt, while relatively fewer empirical studies have focused specifically on Anambra State despite its growing urban environmental challenges.

Furthermore, previous studies rarely integrate the variables of media environmental campaigns, public behavioural response, and institutional waste management capacity within a single analytical framework. This study therefore builds on existing scholarship by specifically evaluating the effectiveness of media environmental campaigns on solid waste disposal practices in Anambra State, Nigeria. The study contributes to the literature by providing empirical evidence on the relationship between environmental communication,

public behaviour, and sustainable waste management within the socio-cultural and urban context of Anambra State.

### **Theoretical Framework**

This study is anchored primarily on the Development Media Theory and complemented by the Health Belief Model (HBM) and the Theory of Planned Behavior (TPB). The integration of these theories provides a comprehensive explanatory framework for understanding how media environmental campaigns influence public attitudes and behaviours toward solid waste disposal practices in Anambra State, Nigeria. The theories are particularly relevant because they explain the relationship between media exposure, public awareness, attitude formation, behavioural intention, and actual environmental practices.

#### ***Development Media Theory***

The Development Media Theory was propounded by McQuail (2010) to explain the role of the media in supporting national development goals, especially in developing societies. The theory argues that the mass media should be consciously utilized as instruments for social transformation, public enlightenment, and developmental mobilization. Unlike the libertarian perspective that emphasizes absolute media freedom, Development Media Theory posits that the media have social responsibilities toward promoting national development priorities such as health, education, environmental sustainability, and social welfare.

In the context of this study, the theory is relevant because environmental campaigns disseminated through radio, television, newspapers, social media, and other communication channels are intended to sensitize residents about proper solid waste disposal practices and encourage environmentally responsible behaviour. The theory assumes that sustained and strategic media exposure can influence public knowledge, attitudes, and behavioural orientation toward environmental sanitation.

The study particularly adopts the Assessment, Communication Analysis, Design and Action (ACADA) model of development communication as advanced by Nwodu (2005). The ACADA model emphasizes systematic communication planning involving audience analysis, communication channel selection, message design, implementation, and evaluation. According to the model, effective development communication campaigns must be participatory, audience-centered, culturally relevant, and sustained over time to achieve meaningful behavioural change.

Applied to this study, the ACADA model suggests that for media environmental campaigns in Anambra State to be effective, government agencies and environmental authorities must first understand the environmental challenges and behavioural patterns of residents before designing communication messages. The theory therefore directly links the independent variable: media environmental campaigns to the dependent variable: solid waste disposal practices by explaining how exposure to environmental messages can influence public awareness and behavioural compliance.

However, although Development Media Theory adequately explains the role of the media in development communication, critics argue that the theory tends to overestimate the power of media messages while underestimating socioeconomic and structural barriers that may hinder behavioural change (Baran & Davis, 2022). Consequently, the present study complements the theory with behavioural theories that specifically explain how individuals process information and translate awareness into action.

### *Health Belief Model (HBM)*

The Health Belief Model (HBM), developed by Rosenstock (1974), explains how individual beliefs and perceptions influence behavioural decisions, particularly regarding health-related practices. The theory posits that individuals are more likely to adopt positive behaviour when they perceive a problem as serious, believe they are personally vulnerable to it, and are convinced that specific actions can reduce the associated risks.

The major constructs of the Health Belief Model include: (i) perceived susceptibility, (ii) perceived severity, (iii) perceived benefits, (iv) perceived barriers, (v) cues to action, and (vi) self-efficacy.

In relation to this study, media environmental campaigns serve as “cues to action” by informing residents about the dangers associated with indiscriminate waste disposal such as flooding, disease outbreaks, environmental pollution, and poor sanitation. Exposure to such media messages may increase residents’ perception of environmental risks and encourage them to adopt proper waste disposal practices.

The Health Belief Model is particularly relevant in explaining why some individuals may comply with environmental sanitation messages while others may not. For instance, even when residents are aware of proper waste disposal methods, behavioural compliance may remain low if they perceive waste disposal facilities as inaccessible or ineffective. Thus, the theory helps explain the interaction between media sensitization and behavioural response.

### *Theory of Planned Behavior (TPB)*

The Theory of Planned Behavior (TPB), developed by Ajzen (1991), further strengthens the analytical framework of this study by explaining how attitudes, subjective norms, and perceived behavioural control influence human actions. According to the theory, behavioural intention is the strongest predictor of actual behaviour.

The theory identifies three major determinants of behaviour: (i) Attitude toward the behaviour; (ii) Subjective norms; and (iii) Perceived behavioural control.

Within the context of this study, media environmental campaigns are expected to shape positive attitudes toward proper waste disposal practices. The campaigns may also influence subjective norms by creating social expectations that discourage indiscriminate dumping of refuse. Furthermore, when residents believe they possess the ability and opportunity to

practice proper waste disposal, they are more likely to comply with environmental sanitation guidelines.

The TPB is useful because it recognizes that behavioural change is not determined solely by awareness or knowledge. Rather, behaviour is influenced by social pressures, individual attitudes, and the perceived availability of facilities and institutional support. This makes the theory highly relevant to waste disposal practices in Anambra State, where infrastructural deficiencies and inconsistent waste collection systems may affect public compliance with environmental sanitation campaigns.

### *Integration of the Theories with the Study Variables*

The integration of the Development Media Theory, Health Belief Model, and Theory of Planned Behavior provides a multidimensional explanation of the relationship between media environmental campaigns and solid waste disposal practices.

The independent variable of the study, media environmental campaigns, is explained primarily through Development Media Theory, which emphasizes the media's role in development-oriented communication and public sensitization. The dependent variable—solid waste disposal practices—is explained through the Health Belief Model and Theory of Planned Behavior, which account for how awareness, attitudes, perceptions, social influences, and behavioural intentions shape environmental practices.

Collectively, the theories suggest that effective media environmental campaigns can improve public environmental awareness and positively influence waste disposal behaviour when: the messages are sustained and persuasive; residents perceive environmental risks as serious; supportive waste management facilities exist; and social and institutional structures encourage behavioural compliance.

The combined theoretical framework therefore provides a stronger analytical basis for evaluating the effectiveness of media environmental campaigns on solid waste disposal practices in Anambra State, Nigeria.

## **Methodology**

### *Research Design*

This study adopted the descriptive survey research design. The choice of the survey design was informed by the nature of the study, which sought to evaluate the effectiveness of media environmental campaigns on solid waste disposal practices among residents of Anambra State, Nigeria. Survey research design is considered appropriate for studies involving the collection of data from a representative sample of a population in order to describe attitudes, opinions, behaviours, and perceptions regarding a particular phenomenon (Creswell & Creswell, 2018). The design enabled the researcher to systematically gather quantitative data from respondents concerning their exposure to environmental media campaigns and their waste disposal practices.

The study focused on the three major urban centres in Anambra State: Awka, Onitsha, and Nnewi. These cities were purposively selected because of their high population density, rapid urbanization, commercial activities, and increasing waste generation challenges. The cities also constitute the major areas where environmental sanitation campaigns by government agencies and media organizations are frequently conducted.

### *Population of the study*

The population of the study comprised adult residents of Awka, Onitsha, and Nnewi metropolis in Anambra State. These urban centres were selected because they experience significant municipal solid waste management challenges associated with rapid urban growth and commercial activities.

### *Sample size and sampling procedure*

A sample size of 600 respondents was adopted for the study. The sample size was considered adequate for a survey study of this nature and was proportionately distributed across the three selected urban centres, with 200 respondents drawn from each city. The determination of the sample size was guided by the recommendation of Krejcie and Morgan (1970), who maintain that a sufficiently large sample enhances representativeness and improves the reliability of survey findings.

The study employed a multistage sampling procedure involving purposive and simple random sampling techniques. First, purposive sampling was used to select the three urban centres of Awka, Onitsha, and Nnewi because of their prominence in population concentration and environmental waste challenges in Anambra State. Subsequently, simple random sampling technique was employed in selecting respondents within the selected locations to ensure fairness and reduce selection bias.

The combination of purposive and random sampling techniques was considered suitable because it enabled the researcher to focus on environmentally vulnerable urban centres while also ensuring that respondents had equal chances of participation within the selected areas.

Out of the 600 copies of questionnaire distributed, 566 copies were correctly completed and returned, representing a response rate of 94.3 percent. This high response rate enhanced the credibility and reliability of the study findings.

### *Instrument for data collection*

The primary instrument for data collection was a structured questionnaire designed by the researcher based on the objectives and variables of the study. The questionnaire consisted mainly of closed-ended items structured on a Likert-type scale to elicit responses on: (i) exposure to media environmental campaigns, (ii) awareness of waste disposal practices, (iii) behavioural compliance with environmental sanitation messages, and (iv) perceptions regarding the effectiveness of government waste management efforts.

The questionnaire was divided into sections corresponding to the major variables of the study. The use of closed-ended questions ensured uniformity in responses and facilitated quantitative analysis.

### *Validity of the instrument*

To ensure content and face validity, the questionnaire was subjected to expert review by specialists in Mass Communication, Development Studies, Environmental Communication, and Research Methodology. Their observations and recommendations helped to improve the clarity, relevance, and appropriateness of the questionnaire items in relation to the objectives of the study.

Content validity is essential in survey research because it ensures that the instrument adequately measures the variables it was designed to assess (Taherdoost, 2016). Based on the experts' suggestions, ambiguous items were modified while irrelevant items were removed before the final administration of the instrument.

### *Reliability of the instrument*

The reliability of the instrument was established through a pilot study conducted outside the study locations using 30 respondents with similar characteristics to the target population. Data obtained from the pilot study were analyzed using Cronbach's Alpha reliability test to determine the internal consistency of the instrument.

The reliability coefficient obtained was 0.81, indicating a high level of internal consistency and reliability of the instrument. According to Pallant (2020), a Cronbach's Alpha coefficient of 0.70 and above is considered acceptable for social science research.

### *Method of data collection*

The researcher, with the assistance of trained field assistants, personally administered the questionnaire to respondents across the selected urban centres. This approach enhanced retrieval rate and ensured that respondents properly understood the questionnaire items before responding.

### *Method of data analysis*

Data generated from the study were analyzed using both descriptive and inferential statistical tools with the aid of the Statistical Package for Social Sciences (SPSS) version 26.

Descriptive statistics such as frequency counts, percentages, mean scores, and standard deviation were used to summarize and describe respondents' demographic characteristics and response patterns. Inferential statistical tools, particularly Chi-square ( $\chi^2$ ) analysis, were employed to test the relationship between exposure to media environmental campaigns and solid waste disposal practices among residents.

The adoption of inferential statistics strengthened the analytical depth of the study by enabling the researcher to make meaningful interpretations and draw conclusions regarding the effectiveness of media environmental campaigns on waste disposal behaviour.

### *Ethical considerations*

The researcher ensured that ethical standards guiding social science research were strictly observed. Participation in the study was voluntary, and respondents were assured of confidentiality and anonymity. Respondents were also informed that the information provided would be used strictly for academic purposes.

## Data Presentation and Analysis

### *Demographic characteristics of respondents*

Table 1 presents the demographic characteristics of the respondents used for the study.

**Table 1: Demographic distribution of respondents (N = 566)**

<b>Sex</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
	Male	202	35.69
	Female	364	64.31
Total		566	100
<b>Age</b>		<b>Frequency</b>	<b>Percentage</b>
	18-25	154	27.21
	26-33	170	30.04
	34-41	104	18.38
	42 and above	138	24.38
Total		566	100
<b>Occupation</b>		<b>Frequency</b>	<b>Percentage</b>
	Civil Servant	176	31.10
	Trading	222	39.22
	Artisan	66	11.66
	Unemployed	102	18.02
<b>Total</b>		<b>566</b>	<b>100</b>

### *Interpretation of demographic data*

The demographic profile of the 566 respondents reveals a predominance of females (64.31%), suggesting their greater involvement in household waste management and environmental sanitation activities in the study area. In terms of age, the majority of respondents (57.25%) were between 18 and 33 years, indicating that the study captured the views of young and economically active individuals who are major generators of solid waste and key targets of media environmental campaigns.

Occupationally, traders constituted the largest group (39.22%), followed by civil servants (31.10%). This distribution reflects the commercial character of cities like Onitsha and Nnewi, where trading activities generate substantial waste. Overall, the demographic characteristics show that the sample is well-suited for examining waste disposal practices, as it predominantly consists of individuals directly involved in household waste generation and management.

### *Research question one*

To what extent has the Anambra State Government provided adequate information and public sensitization on proper solid waste disposal practices among residents of Anambra State?

**Table 2: Respondents' awareness of media campaigns on solid waste disposal practices (n = 566)**

Response	Frequency	Percentage (%)
Yes	189	33.39
No	377	66.61
<b>Total</b>	<b>566</b>	<b>100</b>

#### *Analysis and Interpretation*

The result indicates that only 189 respondents (33.39%) were aware of media campaigns promoting proper solid waste disposal practices, whereas 377 respondents (66.61%) indicated lack of awareness.

This implies that environmental campaign visibility among residents remains relatively low.

**Table 3: Medium through which respondents received waste disposal campaign messages (n = 189)**

Medium	Frequency	Percentage (%)
Radio	106	56.09
Television	44	23.28
Radio/Television	39	20.64
Others	0	0
<b>Total</b>	<b>189</b>	<b>100</b>

#### *Analysis and Interpretation*

Among respondents aware of the campaigns, radio emerged as the dominant communication channel with 56.09%, followed by television (23.28%) and combined radio/television exposure (20.64%).

The finding suggests that radio remains the most accessible and utilized medium for environmental communication in the study area.

**Table 4: Whether media campaigns educated respondents on proper solid waste management (n = 566)**

Response	Frequency	Percentage
Yes	144	25.44
No	422	74.56
<b>Total</b>	<b>566</b>	<b>100</b>

#### *Analysis and Interpretation*

The findings show that only 144 respondents (25.44%) agreed that media campaigns educated them on proper waste management practices, while 422 respondents (74.56%) disagreed.

This suggests that the educational effectiveness of media environmental campaigns remains limited.

#### *Chi-Square analysis of awareness and educational impact of campaigns*

Variable	$\chi^2$	df	p-value	Decision
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Awareness of campaigns and educational impact	118.42	1	.000	Significant
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### *Interpretation of Chi-Square Result*

The Chi-square result reveals a statistically significant relationship between awareness of media campaigns and respondents' perception of their educational value ( $\chi^2 = 118.42$ ,  $p < 0.05$ ). The implication is that respondents who were aware of environmental campaigns were significantly more likely to acknowledge educational exposure on proper waste disposal practices.

### **Research question two**

To what extent have media environmental campaigns influenced positive solid waste disposal practices among residents of Anambra State?

*Table 5: Whether media campaigns promote good waste disposal habits (n = 566)*

Response	Frequency	Percentage (%)
Yes	103	18.20
No	463	81.80
<b>Total</b>	<b>566</b>	<b>100</b>

### *Analysis and Interpretation*

The data indicate that only 103 respondents (18.20%) believed that media campaigns promote positive waste disposal habits, while 463 respondents (81.80%) disagreed. This suggests a generally weak behavioural influence of environmental campaigns.

*Table 6: Whether respondents were personally influenced by media campaigns (n = 566)*

Response	Frequency	Percentage (%)
Yes	79	13.96
No	487	86.04
<b>Total</b>	<b>566</b>	<b>100</b>

### *Analysis and Interpretation*

Only 79 respondents (13.96%) stated that they were personally influenced by the campaigns, whereas 487 respondents (86.04%) reported otherwise. The result indicates that the campaigns achieved minimal behavioural impact among residents.

*Table 7: Whether respondents sort waste before disposal (n = 566)*

Response	Frequency	Percentage (%)
Yes	0	0.00-
No	566	100
<b>Total</b>	<b>566</b>	<b>100%</b>

### *Analysis and Interpretation*

None of the respondents indicated that they sort waste before disposal. The result suggests the absence of household waste segregation behaviour among residents.

### *Chi-Square analysis of media campaign influence and waste disposal behaviour*

Variable	$\chi^2$	df	p-value	Decision
Media campaign influence and positive disposal behaviour	146.85	1	.000	Significant

#### *Interpretation of Chi-Square Result*

The Chi-square analysis indicates a statistically significant relationship between exposure to media campaigns and waste disposal behaviour ( $\chi^2 = 146.85$ ,  $p < 0.05$ ).

The result implies that although overall behavioural influence appears low, exposure to environmental campaigns still significantly affects respondents' waste disposal attitudes and practices.

#### *Research question three*

To what extent has the Anambra State Waste Management Authority (ASWAMA) provided adequate facilities and institutional support for sustainable solid waste management in Anambra State?

**Table 8: Availability of dumpsites within respondents' vicinities (n = 566)**

Response	Frequency	Percentage (%)
Yes	326	57.60
No	240	42.40
<b>Total</b>	<b>566</b>	<b>100</b>

#### *Analysis and Interpretation*

A total of 326 respondents (57.60%) confirmed the availability of dumpsites within their vicinities, while 240 respondents (42.40%) reported absence of dumpsites.

The result indicates uneven distribution of waste disposal infrastructure across communities.

**Table 9: Utilization of dumpsites by respondents (n = 326)**

Response	Frequency	Percentage (%)
Yes	309	94.79
No	17	5.22
<b>Total</b>	<b>326</b>	<b>100</b>

#### *Analysis and Interpretation*

Among respondents with access to dumpsites, 309 respondents (94.79%) indicated that they utilize them for refuse disposal, while 17 respondents (5.21%) stated otherwise.

The result shows high utilization of available dumpsites.

**Table 10: Payment of refuse collection levies (n = 566)**

Response	Frequency	Percentage (%)
Yes	492	86.93
No	74	13.07

<b>Total</b>	<b>566</b>	<b>100</b>
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### *Analysis and Interpretation*

The result shows that 492 respondents (86.93%) pay refuse collection levies, while 74 respondents (13.07%) do not.

This indicates substantial public compliance with environmental levy obligations.

**Table 11: Whether refuse collectors visit respondents' homes (n = 566)**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	166	29.33
No	400	70.67
<b>Total</b>	<b>566</b>	<b>100</b>

### *Analysis and Interpretation*

Only 166 respondents (29.33%) reported receiving household refuse collection services, whereas 400 respondents (70.67%) stated otherwise.

The result indicates limited household waste collection coverage.

**Table 12: Prompt evacuation of refuse from dumpsites (n = 566)**

<b>Response</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Yes	159	28.09
No	407	71.91
<b>Total</b>	<b>566</b>	<b>100</b>

### *Analysis and Interpretation*

The findings indicate that 159 respondents (28.09%) believed refuse at dumpsites are promptly evacuated, while 407 respondents (71.91%) disagreed.

This suggests low operational efficiency in waste evacuation activities.

**Table 13: Frequency of refuse evacuation from dumpsites (n = 159)**

<b>Response</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Daily	0	0.00
Twice a week	22	13.84
Thrice a week	0	0.00
Weekly	41	25.79
Bi-weekly	30	18.87
Irregularly	66	41.51
<b>Total</b>	<b>159</b>	<b>100</b>

### *Analysis and Interpretation*

Among respondents who confirmed evacuation activities, 41.51% stated that refuse evacuation occurs irregularly, while none reported daily evacuation.

The result indicates inconsistency in waste evacuation operations.

### *Chi-Square analysis of waste management infrastructure and disposal Behaviour*

Variable	$\chi^2$	df	p-value	Decision
Availability of dumpsites and utilization behaviour	269.57	1	.000	Significant

#### *Interpretation of Chi-Square Result*

The Chi-square analysis reveals a statistically significant relationship between availability of dumpsites and residents' utilization of proper waste disposal facilities ( $\chi^2 = 269.57$ ,  $p < 0.05$ ). The implication is that access to waste disposal infrastructure significantly influences proper waste disposal practices among residents in Anambra State.

#### **Discussion of Findings**

This study examined the effectiveness of media environmental campaigns on solid waste disposal practices in Anambra State, Nigeria. The findings reveal significant gaps in environmental communication, public behavioural change, and institutional waste management mechanisms. Rather than functioning as effective instruments for promoting sustainable waste disposal practices, media campaigns appear to have had limited reach and minimal influence on residents' environmental behaviour.

- 1) *Media environmental campaigns and public awareness:*** One of the major findings of the study is the low level of public awareness of media campaigns promoting proper solid waste disposal practices. The data showed that a substantial majority of respondents were unaware of any environmental campaign on waste management. This finding suggests that environmental communication efforts by government agencies and relevant stakeholders have not achieved sufficient penetration among residents of Awka, Nnewi, and Onitsha. This finding is consistent with previous studies which have identified inadequate environmental communication as a major constraint to sustainable waste management in developing countries. For instance, Orhororo and Oghoghorie (2019) observed that ineffective public awareness programmes contribute significantly to poor waste management practices in Nigerian cities. Similarly, Iroegbu (2024) argues that environmental sustainability initiatives often fail because communication strategies do not adequately reach or engage target populations. The finding also supports the assumptions of Development Media Theory, which posits that the media can only facilitate social and developmental change when messages are disseminated consistently, strategically, and to a sufficiently broad audience. The dominance of radio as the principal medium through which respondents encountered waste management messages further reinforces the continued relevance of traditional media in environmental communication. However, the relatively low overall awareness level suggests that existing campaigns may be sporadic, inadequately funded, or poorly coordinated across media platforms.
- 2) *Media campaigns and behavioural change:*** A central objective of the study was to determine whether media environmental campaigns have influenced solid waste disposal behaviour among residents. The findings indicate that only a small proportion of

respondents reported being influenced by environmental campaign messages. Similarly, most respondents believed that the campaigns neither adequately educated them on waste management practices nor promoted positive waste disposal habits. These findings suggest a weak relationship between message exposure and behavioural outcomes. Although communication campaigns are generally expected to increase environmental knowledge and encourage positive behavioural change, the results indicate that awareness alone is insufficient to alter entrenched disposal practices. This finding aligns with the propositions of the Theory of Planned Behaviour, which argues that behaviour is influenced not only by information exposure but also by attitudes, social norms, perceived behavioural control, and enabling environmental conditions (Ajzen, 1991). The finding is also consistent with recent studies emphasizing that environmental awareness does not automatically translate into pro-environmental behaviour. According to Ojedokun & Balogun, (2022), knowledge of environmental issues may coexist with environmentally harmful practices where individuals lack adequate motivation, incentives, or supporting infrastructure. Similarly, Odonkor and Sallar (2021) found that while residents may be aware of environmental sanitation messages, actual compliance depends largely on institutional support and convenience. The implication is that media campaigns in Anambra State may be overly informational and insufficiently persuasive, participatory, or action-oriented. Consequently, they have achieved limited success in influencing residents' waste disposal behaviour.

- 3) ***Waste segregation and sustainable waste management practices:*** An important finding of the study is that none of the respondents reported sorting their waste before disposal. This finding is particularly significant because waste segregation at source is widely regarded as a critical prerequisite for effective recycling, resource recovery, and sustainable waste management. The finding corroborates earlier observations by Okpala (1997) regarding the absence of a "sorting-at-source" culture in many Nigerian cities. It also aligns with more recent studies indicating that waste segregation remains poorly institutionalized in Nigeria despite its environmental and economic benefits (CAPP Africa, 2025; Iroegbu, 2024). The absence of waste sorting suggests that environmental campaigns have not effectively communicated the importance of source separation as a sustainable waste management strategy. From a behavioural perspective, the finding further supports the proposition that environmental knowledge alone is insufficient to induce behavioural change where appropriate facilities, incentives, and enforcement mechanisms are lacking. Effective waste segregation requires not only public awareness but also the provision of separate collection systems, recycling facilities, and supportive government policies.
- 4) ***Availability of waste management infrastructure and disposal behavior:*** The study further found that the availability of dumpsites influenced disposal behaviour. Most respondents who reported having access to nearby dumpsites also indicated that they regularly utilized those facilities. This finding suggests that proximity and accessibility of waste disposal

infrastructure significantly shape residents' waste management practices. The result supports findings from previous studies which emphasize that environmental behaviour is strongly influenced by infrastructural availability. Odonkor and Sallar (2021) observed that residents are more likely to dispose of waste properly when designated disposal facilities are accessible and conveniently located. Similarly, the Theory of Planned Behaviour highlights the importance of perceived behavioural control, suggesting that individuals are more likely to engage in desirable behaviours when enabling conditions are present. However, the study also revealed that respondents without convenient access to dumpsites resorted to environmentally harmful disposal methods such as dumping waste in bushes, drainage channels, and open spaces. This finding illustrates how infrastructural deficiencies can undermine environmental sustainability efforts and contribute to environmental degradation.

- 5) ***Institutional performance and waste management service delivery:*** Another important finding concerns the performance of waste management authorities. Although the majority of respondents indicated that they regularly paid refuse collection levies, most reported that refuse collectors rarely visited their homes and that wastes deposited at dumpsites were not evacuated promptly. This finding points to a disconnection between revenue collection and service delivery. It suggests that institutional inefficiencies may be undermining public confidence in formal waste management systems. The finding is consistent with previous studies that identified inadequate operational capacity, poor logistics, and weak institutional accountability as major constraints to effective waste management in Nigeria (Amuda et al., 2014; Orhororo & Oghoghorie, 2019). The findings also help explain why environmental campaigns alone may not produce significant behavioural change. Citizens are less likely to comply with recommended disposal practices when waste management institutions fail to provide reliable and efficient collection services. Thus, effective waste management requires not only public awareness but also institutional responsiveness and service efficiency.
- 6) ***Environmental awareness and compliance gap:*** The study further revealed an interesting paradox. While a majority of respondents were aware that indiscriminate waste disposal is prohibited by law, this awareness did not necessarily translate into environmentally responsible behaviour. This finding suggests the existence of a compliance gap between environmental knowledge and environmental action. This observation aligns with findings from environmental behaviour studies that distinguish between awareness and practice. According to Ajzen (1991), knowledge is only one of several determinants of behaviour. Social norms, perceived consequences, convenience, and institutional support often exert greater influence on behavioural outcomes. Consequently, awareness of environmental regulations may not lead to compliance where enforcement mechanisms are weak or where individuals perceive limited consequences for violations.

## Summary of the discussion

Overall, the findings suggest that media environmental campaigns in Anambra State have achieved limited effectiveness in promoting sustainable solid waste disposal practices. The low level of campaign awareness, weak behavioural influence, and absence of waste segregation practices, inadequate waste management infrastructure, and deficiencies in service delivery collectively point to a broader challenge that extends beyond communication alone. The findings indicate that effective waste management requires an integrated approach that combines strategic environmental communication, behavioural change interventions, accessible waste management infrastructure, and responsive institutional support systems. Such an approach would enhance the capacity of media campaigns to translate environmental awareness into sustained behavioural change and improved waste disposal practices.

## Conclusion

This study evaluated the effectiveness of media environmental campaigns on solid waste disposal practices in Anambra State, Nigeria. The findings reveal that media campaigns have achieved limited success in promoting sustainable waste disposal behaviour among residents. Public awareness of environmental campaigns was generally low, while the educational and behavioural influence of the campaigns was found to be weak. The study further established that waste segregation practices are virtually non-existent among residents, despite growing concerns about environmental sustainability and the increasing importance of recycling in modern waste management systems.

The findings also indicate that deficiencies in waste management infrastructure and service delivery constitute major obstacles to proper waste disposal practices. Although a significant proportion of residents pay refuse collection levies and are aware that indiscriminate waste disposal violates environmental regulations, inadequate waste collection services, irregular evacuation of refuse from dumpsites, and limited accessibility to waste disposal facilities continue to undermine compliance with recommended waste management practices.

Overall, the study demonstrates that effective waste management requires more than environmental awareness campaigns alone. Sustainable improvements in waste disposal practices depend on the integration of effective communication strategies, accessible waste management infrastructure, efficient service delivery mechanisms, and active citizen participation. Consequently, the effectiveness of media environmental campaigns in Anambra State can only be enhanced when they are supported by responsive institutional frameworks and practical waste management interventions.

## Recommendations

Based on the findings of this study, the following recommendations are proposed:

1. ***Strengthen and diversify environmental communication campaigns:*** The Anambra State Government and the Anambra State Waste Management Authority should develop sustained, evidence-based environmental communication campaigns across multiple media platforms, including radio, television, social media, community meetings, and

mobile communication channels. Campaign messages should move beyond awareness creation to focus on behavioural change, emphasizing practical waste disposal actions and their environmental consequences.

2. ***Introduce community-based waste education programmes:*** Environmental education should be institutionalized at the community level through collaboration with local government authorities, traditional institutions, religious organizations, market associations, and civil society groups. Such programmes should specifically promote waste segregation, recycling, and responsible disposal practices.
3. ***Establish and expand waste segregation and recycling systems:*** Government should provide colour-coded waste bins and designated collection points to facilitate waste separation at source. In addition, incentives should be introduced to encourage households and businesses to participate in recycling programmes, thereby reducing the volume of waste sent to dumpsites.
4. ***Improve accessibility to waste disposal infrastructure:*** Additional waste collection points and strategically located neighbourhood dumpsites should be established in underserved communities to reduce the distance residents travel to dispose of waste. Improved accessibility will likely enhance compliance with approved waste disposal practices and reduce indiscriminate dumping.
5. ***Enhance operational efficiency of waste management agencies:*** Waste management authorities should strengthen refuse collection and evacuation systems by adopting clearly defined collection schedules and monitoring mechanisms. Regular evacuation of waste from dumpsites should be prioritized to prevent environmental pollution and maintain public confidence in formal waste management systems.
6. ***Reintroduce and modernize door-to-door waste collection services:*** Given the high proportion of respondents who reported the absence of household waste collection services, a structured door-to-door collection system should be reintroduced, particularly in densely populated urban areas. Collection should be conducted at least twice weekly and integrated with digital monitoring systems to ensure accountability and service effectiveness.
7. ***Strengthen enforcement of environmental regulations:*** While public awareness of environmental laws is relatively high, compliance remains inconsistent. Environmental protection agencies should therefore strengthen enforcement mechanisms through regular inspections, penalties for indiscriminate waste disposal, and community-based reporting systems, while ensuring that enforcement is accompanied by adequate waste disposal alternatives.
8. ***Promote multi-stakeholder partnerships for sustainable waste management:*** Sustainable waste management requires collaboration among government agencies, private waste operators, media organizations, educational institutions, and community groups. Public-

private partnerships should be encouraged to mobilize resources, improve service delivery, and support innovative waste management solutions across the state.

9. **Support Future Research on Environmental Communication and Behavioural Change:** Future studies should employ advanced statistical techniques and mixed-methods approaches to examine the causal relationship between media exposure and environmental behaviour. Comparative studies across different states and demographic groups would also provide deeper insights into the factors influencing sustainable waste management practices in Nigeria.

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