Perception of South-East Women on 2024 Nigerian Federal Ministry of Environment's Media Campaign Messages on Adaptation and Mitigation of Heat Waves

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Abstract
Climate change continues to pose significant challenges, particularly in developing countries like Nigeria, where extreme weather events, such as heat waves, are becoming increasingly prevalent. The 2024 Nigerian Federal Ministry of Environment launched a series of communication campaigns aimed at raising awareness and encouraging adaptation and mitigation strategies against heat waves. This study investigated the perception of South-East Nigerian women toward these messages, focusing on their perceived relevance, truthfulness, and effectiveness in fostering adaptive behaviours. The study adopted a descriptive survey design and utilized a structured questionnaire to gather data from 381 women across selected communities in the South-East region of Nigeria. The questionnaire captured respondents' demographic data, views on the truthfulness, relevance, and overall effectiveness of the Ministry's messages, as well as their suggestions for improvement. Data were analysed using descriptive statistics such as percentages and frequency distributions. The findings showed that the majority of respondents were generally well-educated, with 48.8% holding a first degree, followed by 27% who had completed SSCE/WAEC. Additionally, 13.6% possessed postgraduate qualifications. Only a small percentage (10.5%) reported having no form of education or attaining only the First School Leaving Certificate (FSLC). A majority (72.4%) of respondents resided in urban areas while 27.6% lived in rural areas. The findings revealed that 54% of respondents perceived the messages as truthful and relevant, indicating a generally positive reception. A significant proportion of the respondents (65%) believed that increased dissemination of climate-related information could significantly reduce the prevalence of heat waves in their communities. This underscores the perceived importance of effective communication in driving adaptive behaviours and building resilience against climate challenges. However, 4% of respondents expressed scepticism, viewing the messages as government propaganda. In conclusion, the study highlights the critical role of effective communication in addressing climate challenges.

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While the Ministry's messages were positively received by a majority, the presence of scepticism among some respondents emphasizes the need for greater transparency and trust-building in public communication campaigns. The study recommends adopting a participatory approach to message development, ensuring that local communities, particularly women, are actively involved. Additionally, it calls for the dissemination of actionable and evidence-based information through diverse communication channels to enhance the credibility and impact of future campaigns. Regular monitoring and evaluation of communication efforts are also essential for refining strategies and ensuring sustained engagement.
Keywords: Perception, Women, Environment, Media Campaign, Adaptation and Mitigation, Heat Waves.

Introduction

On February 28, 2024, the Nigerian Federal Ministry of Environment (FME) issued an advisory on how to manage heat waves, which was heavily reported by Nigerian media organizations. A heat wave is a prolonged period of excessively hot weather, typically accompanied by high humidity and minimal precipitation (George, 2024). This shows that a heat wave is an extreme weather event when the temperature in a given region is unusually warmer than average and lasts for a period lasting from a few days to months. These periods are often experienced in some parts of Nigeria, with signs of abnormally hot and dry weather that often lasts for many days. The heat wave is also characterized by soaring temperatures, exacerbating discomfort, and posing risks to human health and well-being. According to the World Meteorological Organization (2021), this period is characterized by a prolonged and excessively hot weather, typically lasting two or more days, with temperatures significantly above 32^0C (90^0F) for Nigeria. In congruence, the National Oceanic and Atmospheric Administration affirmed that the period of heat waves may be abnormally hot and could last for weeks, with temperatures surpassing a specified threshold relative to the local climate (George, 2024).

Heat wave is one of the four types of extreme events addressed by the Extremes Grand Challenge of the World Climate Research Programme (WCRP) (Alexander et al, 2016). Extreme heat has led to the deaths of 30 million people in the last three decades (Vicedo-Cabrera et al, 2021). The 2003 European heat wave, for example, killed 70,000 people (Robine et al, 2008). Heat affects both rural and urban populations, where there is increasing exposure to morbidity and mortality from extreme heat and related heat illnesses (Hatvani-Kovacs *et al*, 2016; Zander, Matthew, & Garnett, 2018). Temperatures in some regions of the world are already exceeding life-threatening thresholds during heat waves, and eventually such places will become inhabitable (Horton *et al*, 2021). Apart from killing people, women who are distressed and have several health challenges, such as chronic illnesses like cancer, may be severely affected by heat waves, which can reduce their productivity, and disrupt their comfort.

As Nigeria grapples with an intense heat wave, with temperatures reaching 39 °C in the south and 41°C in the north, many believed that the implications for its people were far-reaching and demand urgent attention (George, 2024). It is against this backdrop that the FME issued the advisory. According to this advisory, as reported by Ileyemi (2024) in the *Premium Times Newspaper*, exposure to heat waves can pose serious health, social, environmental, and economic risks. Infants, women, especially pregnant ones, and the elderly are more vulnerable to heat stress, with symptoms that include dry lips, excessive

thirst, dizziness, nausea, heat rashes, mild fever, confusion, fainting, and a high body temperature. To mitigate these, the FME (Ileyemi) advised as follows:

A. Be prepared
Plan your outdoor activities to avoid unnecessary exposure to the heat waves. Keep an emergency kit at home that contains oral rehydration salt (ORS) packets, a thermometer, water bottles, towels or cloths to wet for cooling, and a handheld fan with batteries. Know how to get help. Note down the contact information for the nearest health care provider or ambulance/transport services.
B. Keep your home cool
When possible, close the curtains during the hottest parts of the day and open windows at night to cool down the house.
Use a fan or air conditioning, if available.
C. Stay out of the heat
Do not go outside during the hottest times of the day if you can avoid it. Try to arrange your activities earlier or later in the day when it is cooler.
When outside, wear sunscreen and try to stay in the shade or use hats and umbrellas for protection. Never leave anyone in a parked and closed vehicle.
D. Stay cool and hydrated
Drink water at regular intervals before you are thirsty. Wear light and loose-fitting clothing. Cotton is ideal during hot days to help reduce heat rashes and absorb sweating. Similarly, cotton bed sheets are recommended over non-breathable materials.
Carry a water bottle and a small towel, so you can hydrate and cool down by placing a wet towel on your neck.
Stay in cool places, spots in the shade or places with air conditioning. Reduce physical activity and avoid participating in outdoor sports in the central hours of the day. Avoid drinks that contain caffeine, alcohol or sugar.
Eat light (fruits, vegetables) and reduce high-fat foods.
E. Tips for infants, children and pregnant women
Infants and children
DO check regularly if your child is thirsty, sweating, feeling hot, vomiting, has a dry and sticky mouth, or experiencing headaches. If your child is not responding properly, has a high fever, is dizzy or is breathing fast, take them to the health facility immediately.
DO make sure that your child is clothed loosely – this can help prevent heat rashes and becoming too hot.
DO check that your child is well hydrated. They may not know what dehydration and heat stress feel like. Breastfeed infants under 6 months exclusively. Breastfeeding mothers should drink plenty of water as dehydration can affect breast milk production. Children aged 6 months and over should drink water regularly throughout the day.

Pregnant women
DO schedule medical visits and any tasks for when it is less hot in the day to prevent exposure to yourself and your unborn baby.
DO sleep in cooler areas, such as on the lower floors of the building, when
The communication intervention messages from the Federal Ministry of environment was targeted at encouraging Nigerians to plan their outdoor activities, avoid unnecessary exposure to heat waves, and keep an emergency kit or first aid kit at home that contained Oral Rehydration Salt (ORS) packets, a thermometer, towels or clothes for

cooling, and a handheld fan with batteries. The intervention further provided that when possible, Nigerians should close their curtains during the hottest parts of the day and open windows at night to cool down the house; that Nigerians should not go outside during the hottest times of the day if they can avoid it; and that when outside, they should wear sunscreen and try to stay in the shade or use hats and umbrellas for protection. The advisory intervention further specified that Nigerians should drink water at regular intervals before they are thirsty, wear light and loose-fitting clothing, reduce physical activity, and avoid participating in outdoor sports in the central hours of the day, amongst several other related activities.

Nigerian women are expected to respond swiftly to these messages. The reason is simple. Women are arguably the most affected by the devastating heat waves and are particularly vulnerable due to factors including their physiological differences, particularly during pregnancy. Heat also creates a double burden for women, who are also more frequently shouldering additional paid and unpaid care responsibilities associated with heat-related illness. The focus on South-East women is important as women in this region are vulnerable to the adverse effects of heat waves due to their socioeconomic status and cultural roles. As a consequence, these women are more susceptible to economic losses when rising temperatures make it physically difficult, if not impossible, to work. Women's perception of a communication intervention therefore is important for the effectiveness of these messages.

Perception refers to the process by which individuals organize, interpret, and give meaning to sensory stimuli from their environment. It is a psychological process influenced by personal experiences, cultural backgrounds, and cognitive interpretations, which enables individuals to understand and interact with the world around them (Schiffman & Kanuk, 2010). In a communication context, perception involves how individuals interpret and make sense of messages they receive. This process is subjective and varies widely based on individual differences such as prior knowledge, attitudes, beliefs, and situational contexts (Baran, 2021). Perception is often seen as the outcome of an interaction between sensory inputs (e.g., visuals, sounds) and mental processes, making it a crucial element in understanding how messages are received and acted upon. Additionally, perception is not just a passive reception of information but an active process influenced by the perceiver's expectations and motivations. For example, selective perception occurs when individuals filter and prioritize information based on its relevance to their needs and goals (Pickens, 2015).

In the context of public communication, such as FME messages on adaptation and mitigation of heat waves, perception determines how women interpret the significance, urgency, and applicability of the information presented, influencing their attitudes and behaviours toward the subject matter (Kumar, 2020).

Studies on adverse extreme climate conditions like heat waves and audience perception of the same have attracted attention of researchers globally. Howe et al. (2019) analysed a comprehensive survey dataset of 9,217 respondents to assess Americans' perceived health risks from extreme heat across 50 U.S. states, 3,142 counties, and 72,429 populated census tracts. Their findings revealed that states in warmer climates, such as Texas, Nevada, and Hawaii, exhibit some of the highest perceptions of heat risk. However, states in cooler climates, despite facing greater health risks from heat, tend to have lower perceived risk. Similarly, areas with older populations, who are more vulnerable to heat-related health effects, often exhibit lower risk perceptions,

exacerbating their vulnerability due to reduced awareness, which hinders adaptive responses.

The study also found that poorer neighbourhoods and those with larger minority populations generally report higher risk perceptions compared to wealthier, predominantly white neighbourhoods, reflecting the disparity in vulnerability across these groups. The authors emphasize that comprehensive models addressing extreme weather risks should incorporate individual perceptions, as these play a critical role in motivating behaviour. Additionally, understanding risk perceptions at localized spatial scales can enhance the targeting of communication and education efforts, directing heat adaptation initiatives to areas where they are most urgently needed.

Klingelhöfer *et al*. (2023) investigated whether global research adequately addresses the growing threat of heat waves in the context of climate change. Their study offered a comprehensive overview of the publication landscape, highlighting key contributors, motivations, and priorities for future research efforts. These insights aim to benefit not only scientists but also stakeholders and project funders seeking to align with evolving research needs. The study identified the USA, Australia, China, and several European nations as prominent contributors to heat wave research. When socio-economic metrics were considered, Switzerland and Portugal emerged as leaders, while Australia and the UK stood out when factoring in the change in heat wave-exposed populations. The authors concluded that national research interests in heat waves are primarily influenced by exposure levels and the economic strength of the publishing countries. They emphasized the need for internationally coordinated efforts to establish efficient monitoring and early detection systems, particularly for economically disadvantaged regions, to facilitate preventive measures and mitigate the impacts of heat waves. Additionally, they recommended that research approaches should prioritize a global perspective, rather than focusing solely on regions with previous extreme heat events. While the study by Klingelhöfer et al. examined the extent to which global research reflects the growing threat of heat waves in the context of climate change, the current study shifts focus to investigate the perception of women regarding communication intervention messages on heat wave adaptation and mitigation. This emphasis on public perception provides a complementary understanding of how communication strategies influence adaptive behaviours at the community level.

Moisoglou *et al*. (2024) investigated the predictors of knowledge, attitudes, and practices related to heat waves. The study aimed to evaluate individuals' understanding, attitudes, and behaviours concerning heat wave preparedness and response. Conducted as an exploratory cross-sectional study in Greece in September 2023, the researchers used a convenience sample of 1,055 participants. Socio-demographic variables, including gender, age, and educational level, were analysed as potential determinants. The study reported mean scores of 12.5 for knowledge, 22.7 for awareness, 22.2 for practice, and 12.1 for behaviour. A significant positive relationship was identified between self-perceived health status and factors such as awareness, practice, and behaviour concerning heat waves, highlighting the importance of individual health perceptions in shaping adaptive responses to extreme heat events.

Similarly, they identified a positive relationship between self-perceived financial status, and awareness and behaviour concerning heat waves. Increased age was associated with an increased practice score, while increased educational level was associated with an increased knowledge score. Additionally, they found that the

behaviour score was higher among participants in urban areas than those in rural areas and that several socio-demographic variables affect participants' knowledge, awareness, practice, and behaviour concerning heat waves.

The study was focused on the predictors of knowledge, attitudes, and practices regarding heat waves, while the current study was aimed at exploring the perception of women in the South-East to communication intervention messages on heat waves. Furthermore, the study did not consider women's perspectives on heat waves. Differences in demographics and socio-economic characteristics of women may influence the perception and adaptive capacities to heat wave events, highlighting the importance of women-specific analyses and interventions (Dimitrova, et al, 2021). As the Nigerian government has recommended an intervention, how do women perceive this communication? It is important therefore, to explore the perception of women in South East, Nigeria on the 2024 Federal Ministry of Environment's messages on adaptation and mitigation of heat waves.

Statement of the Problem

Communication intervention messages are meant to inform the public on matters of urgent importance requiring commensurate responses. The 2024 Nigeria Federal Ministry of Environment communication intervention on heat wave was directed at the general populace to mitigate rising heat waves. Women who are particularly vulnerable to this weather extreme need to accept this message for their wellbeing and those of their families.

It is not known, however, how these women perceive the FME message on heat wave. In addition, there is little or no available research that ascertained the effectiveness of the 2024 FME message among women in South-East Nigeria. As the effects of heat waves are disproportionately felt by women in developing countries like Nigeria, extreme heat tends to pose serious health risks, including heat-related illnesses such as heat exhaustion, heatstroke, dehydration, and cardiovascular complications, especially among women.

If women's perceptions of this communication intervention are not ascertained, it may be difficult to determine whether the FME message has made or is making the desired impact. Worse still, the message's aim would have been defeated. Therefore, the study was poised to solve the problem of determining women's perceptions of adaptation and mitigation of heat waves in South East Nigeria.

Theoretical Foundation of Study

The study hinges on the Health Belief Model by Hochbaum, Rosenstock, and Kegels (1974).

Health Belief Model

The Health Belief Model (HBM) is a psychological model that attempts to explain and predict health behaviours. This is done by focusing on the attitudes and beliefs of individuals. The HBM was first developed in the 1950s by social psychologists Hochbaum, Rosenstock, and Kegels working in the U.S. Public Health Services, The model was created in response to the failure of a free tuberculosis (TB) health screening programme. Since then, the HBM has been adopted to explore a variety of long-term and

short-term health behaviours, including sexual risk behaviours and the transmission of HIV/AIDS.

Using HIV/AIDS prevention as illustration, HBM explains that a person will take a health-related action (e.g., use condoms) if that person:

1. feels that a negative healthy condition (i.e., HIV) can be avoided,
2. has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition (i.e. using condoms will be effective at preventing HIV), and
3. believes that he/she can successfully take a recommended health action (i.e., he/she can use condoms comfortably and with confidence).

The HBM was spelled out in terms of four constructs representing the perceived threat and net benefits: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. These concepts were proposed as accounting for people's "readiness to act." An added concept, "cues to action," would activate that readiness and stimulate overt behaviours. A more recent addition to the HBM is the concept of "self-efficacy," or one's confidence in the ability to successfully perform an action. This concept was added by Rosenstock and others to help the HBM better fit the challenges of changing habitual unhealthy behaviours, such as being sedentary, smoking, or overeating.

This model applies to this study because the women in South-East who are exposed to the 2024 Nigerian Federal Ministry of Environment's message on adaptation and mitigation of heat waves have perceived chances of developing favourable or positive behavioural conditions. However, the different ways the women develop favourable behavioural conditions towards the messages of 2024 communication intervention message on heat waves by the Nigerian Federal Ministry of Environment or otherwise, will help justify how efficient the messages are in addressing the dangers/ challenges of heat waves among women in South-East, Nigeria. As the model suggests that people's behaviour is influenced by their perception of the risks posed by a particular health problem and perceived effectiveness and feasibility of the proposed solution, the result of the study can enable the Ministry of Environment to frame subsequent communication intervention messages on heat waves.

Purpose of the Study

The study sought to:

1. Establish how the women in South-East perceive the 2024 Nigerian Federal Ministry of Environment's messages on adaptation and mitigation of heat waves.

Research Question

The study was guided by the following research question:

1. What is the perception of women in South-East on the 2024 Nigerian Federal Ministry of Environment's messages on adaptation and mitigation of heat waves?

Methods

This study adopted the quantitative research design, involving the survey approach. This was used to determine the women's level of exposure and sources of FME's heat waves messages. The area of study was the South–East geopolitical Zone in Nigeria, comprising five states, namely: Anambra, Enugu, Imo, Abia and Ebonyi. The study population was 12,414,443 Nigerian women in the South-East, which was a projection from the 2006

population size of the women put at 8,210604 (Nigerian Population Census, 2006). A multi-stage probability sampling technique was employed to select a sample of 384 respondents. In each selected State, purposive sampling technique was used to accommodate urban-rural dichotomy. A close-ended questionnaire was used for data collection. Both face and construct validities were conducted for the instrument through experts. Reliability test was also conducted through a pilot test, and a reliability coefficient index of 0.86 was obtained. Descriptive statistics encompassing the frequency distribution, and percentages.

Demographic Variables

The respondents' demographic variables were measured. Data generated through their response are hereby presented:

Table 1: Level of Education

Education Level	Frequency	Percentage (%)
None	18	4.7
FSCL	22	5.8
SSCE/WAEC	103	27.0
First Degree	186	48.8
Post Graduate	52	13.6
Total	**381**	**100**

Source: Field Survey (2024)

A significant portion of respondents (48.8%) had a first degree, followed by 27% with SSCE/WAEC. The percentage of those with post-graduate qualifications (13.6%) is also notable. This indicates a well-educated sample, which might influence their understanding and response to government messages on heat wave mitigation.

Table 2: Area of Residence

Area of Residence	Frequency	Percentage (%)
Urban	276	72.4
Rural	105	27.6
Total	**381**	**100**

Source: Field Survey (2024)

The majority of respondents reside in urban areas (72.4%), which may indicate higher access to media and information channels. However, 27.6% of respondents live in rural areas, where exposure to government messages might be more limited.

Table 3: Reaction to the Message

Reaction	Frequency	Percentage (%)
Yes	201	53
No	89	23
Never been exposed to it	91	24
Total	**381**	**100**

Source: Field Survey (2024)

As shown in this table, the study revealed that slightly more than half (53%) of respondents reported reacting to the Ministry's messages on heat wave adaptation and mitigation, while 23% indicated no reaction. This suggests that while the message has engaged a significant portion of the population, a notable number remain indifferent or unconvinced by the content, which could be a challenge for the effectiveness of the communication campaign.

Table 4: How respondents conceive the communication message

Perception of Message	**Frequency**	**Percentage (%)**
They are propaganda	68	18
They are truthful	206	54
Undecided	16	4
Never been exposed to it	91	24
Total	**381**	**100**

Source: Field Survey (2024)

The study found that a majority of respondents (54%) perceive the Ministry's messages as truthful, while 18% view them as propaganda. Interestingly, 4% are indecisive about the messages. The undecided group (4%) reflects uncertainty about the credibility of the messages, highlighting that public trust in government communications can be an issue.

Table 5: Do you believe the 2024 Nigerian Federal Ministry of Environment's message on adaptation and mitigation of heat waves?

Belief in the Message	**Frequency**	**Percentage (%)**
Yes	249	65
No	22	6
Undecided	20	5
Never been exposed to it	91	24
Total	**381**	**100**

Source: Field Survey (2024)

A substantial majority (65%) of respondents believe the Ministry's messages, while 11% do not. However, a notable portion (5%) is undecided, reflecting ambivalence toward the reliability of the message. This mixed response indicates that while most people trust the communication, there remains a segment of the population that is sceptical or uncertain. However, 24% of them have never been exposed to the message, reflecting the need for more campaigns on the message.

Table 6: Do you think the 2024 Nigerian Federal Ministry of Environment's message on adaptation and mitigation of heat waves is sufficient for a positive behaviour change?

Sufficiency for Behaviour Change	**Frequency**	**Percentage (%)**
Yes	185	49
No	196	51
Total	**381**	**100**

Source: Field Survey (2024)

There is a slight majority (51%) who believe that the Ministry's message is not sufficient to bring about positive behaviour change, while 49% feel it is sufficient. This suggests that while the message may be informative, it may not be compelling or comprehensive enough to lead to significant behavioural shifts in the population.

Table 7: Do you think lack of information on precautionary measures against heat waves exacerbates the effect of heat in your community?

Lack of Information Exacerbates Effects	Frequency	Percentage (%)
Yes	325	85
No	56	15
Total	**381**	**100**

Source: Field Survey (2024)

A clear majority (85%) believe that the lack of information on precautionary measures exacerbates the effects of heat waves in their community. This indicates a strong belief that more effective communication could mitigate some of the negative impacts of heat waves, reinforcing the need for better information dissemination.

Table 8: Apart from the 2024 Nigerian Federal Ministry of Environment's message on adaptation and mitigation of heat waves, are you aware of any way the government makes provisions for sensitization of people on heat waves in Nigeria?

Awareness of Government Sensitization Efforts	Frequency	Percentage (%)
Yes	191	50.1
No	190	49.9
Total	**381**	**100**

Source: Field Survey (2024)

Respondents were fairly split, with 50.1% aware of other government sensitization efforts, and 49.9% unaware. This suggests that while there are some efforts beyond the 2024 message, their visibility or effectiveness may be limited.

Table 9: If yes, in what ways do you think the government has been doing so?

Sensitization Methods	Frequency	Percentage (%)
Sensitization through partnership with individuals	10	5
Sensitization Through government ministries, Departments, and agencies	70	37
Sensitization Through partnership with NGOs	31	16
Sensitization Through the media	80	42
Total	**191**	**100**

Source: Field Survey (2024

Among those aware of government efforts, the most commonly cited method is through the media (42%), followed by government ministries, departments, and agencies (37%). Partnerships with NGOs and individuals were mentioned less frequently. This highlights the significant role media plays in the government's sensitization campaigns on heat waves.

The responses to these questions provide insight into how the public interprets the government's communication efforts and whether they believe it is leading to meaningful behavior change. The data provides insights into how Nigerians perceive, engage with, and are influenced by the Federal Ministry of Environment's messages on heat wave adaptation and mitigation. While there is a significant level of awareness and exposure, the effectiveness of these messages in bringing about lasting behavioral changes, particularly in rural areas and among younger populations, needs further attention. Additionally, the choice of medium and frequency of exposure to these messages plays a crucial role in their effectiveness.

The responses on the respondents' perception of 2024 Nigerian Federal Ministry of Environment's messages on heat wave adaptation and mitigation also found that while many respondents trust and believe in the messages, a notable portion remains skeptical, with some viewing them as propaganda or a means of government deception. The effectiveness of the messages in fostering behavior change is also questioned, with more than half of the respondents believing that the messages alone are insufficient to induce significant changes in behaviour.

The data further suggests that better information dissemination and more comprehensive communication could enhance the impact of these messages. There is a clear perception that the lack of information on heat wave precautions exacerbates the negative effects of heat waves in communities, making more widespread and clear communication vital.

Discussion of the Findings

The study revealed that 54% of respondents viewed the 2024 Nigerian Federal Ministry of Environment's messages as truthful and relevant, indicating a generally positive perception of the communication. This majority perception suggests that the Ministry's messaging strategies resonated well with women in South-East Nigeria, potentially because the messages addressed pressing concerns about heat wave adaptation and mitigation in a manner that aligned with the audience's lived experiences and expectations. This alignment is crucial, as Moser and Dilling (2021) have shown that effective environmental communication often depends on its ability to connect with the audience's immediate realities and cultural context. However, a smaller but notable segment of 4% of women expressed skepticism, perceiving the messages as government propaganda or tools for public deception. This minority perspective highlights the complex dynamics of trust in government-driven communication, particularly in a climate context. Ferguson (2018) emphasizes that government-led climate communication efforts often struggle with credibility, especially in regions where governance challenges or prior unmet promises have eroded public trust. This skepticism could stem from historical experiences with government programs that failed to deliver intended outcomes, leading some individuals to approach official messages with caution or outright doubt.

The presence of skepticism, even among a small fraction, underscores the need for transparency and sustained engagement in government communication efforts. It suggests that building and maintaining trust is essential for the long-term success of such initiatives. For instance, providing evidence-based data, involving local stakeholders in message creation, and demonstrating measurable outcomes from earlier interventions could help counteract skepticism and strengthen public confidence in government messages. Furthermore, this dichotomy between positive perception and skepticism reflects broader challenges in public communication about climate issues. Research shows that while many audiences recognize the importance of addressing climate-related challenges, they may question the intentions or effectiveness of top-down communication approaches if they perceive a lack of alignment with their priorities or a disconnect between messaging and action (Whitmarsh et al., 2013). This finding reinforces the importance of tailoring communication strategies to the specific needs and concerns of the audience while fostering an environment of mutual trust and collaboration.

The perception of truthfulness in the Federal Ministry of Environment's messages aligns with findings by Dinku, Yigzaw, and Mengistu (2020), which indicate that climate change messages framed as solutions to local problems are more likely to resonate positively with audiences. This framing likely creates a sense of relevance and practicality, as individuals are more inclined to engage with messages that address their immediate concerns and offer actionable solutions within their local context. For women in South-East Nigeria, the acknowledgment of heat waves as a pressing local issue may have contributed to the positive reception among a majority of respondents, reinforcing the importance of context-sensitive communication strategies in environmental messaging.

However, the 4% of women who perceived the messages as propaganda or deceptive illustrate a critical challenge in public communication—overcoming distrust. This skepticism underscores the complex relationship between audiences and government-led initiatives. As Moser (2016) argues, fostering transparency and engaging local communities are essential to building trust and ensuring the credibility of climate change communication. Without these elements, even well-crafted messages can be met with doubt, especially in regions where there is a history of unfulfilled promises or a lack of visible outcomes from previous government interventions.

The study also highlights that women's perception of these messages is shaped by more than just the content of the communication. Their previous experiences with government-led initiatives and the broader socio-political environment play a pivotal role in influencing how they interpret and respond to such messages. For instance, if past government programs were perceived as ineffective or exploitative, this could lead to a default assumption of propaganda, regardless of the current message's merit. This dynamic emphasizes the importance of adopting a participatory approach to communication. Actively involving local communities, particularly women as key stakeholders, in the planning, design, and dissemination of climate change messages can help to bridge the trust gap. It also ensures that the messages are not only relevant but also co-created in a manner that reflects the lived realities and priorities of the target audience.

Ultimately, the study points to the dual importance of content and process in public communication. While framing messages as solutions to local problems is effective, it

must be complemented by efforts to build trust through transparency, inclusivity, and consistent follow-through. This holistic approach can enhance the credibility and effectiveness of government communication, fostering greater public engagement and action on critical environmental issues. A significant majority of respondents (54%) perceived the Ministry's messages as truthful and relevant, which suggests that the communication was effective in addressing local concerns and aligning with the audience's expectations. This finding corroborates the work of Dinku, Yigzaw, and Mengistu (2020), who argue that positive perceptions of climate communication can significantly enhance the effectiveness of adaptation strategies. When climate change messages are deemed credible and relevant, they are more likely to motivate individuals to adopt recommended behaviors and solutions, creating a foundation for impactful climate action.

However, a smaller but notable portion of respondents—4%—expressed skepticism, viewing the messages as government propaganda or as deceptive. This skepticism is not an isolated phenomenon but reflects broader issues documented in the literature. Ferguson (2018) emphasizes that historical distrust in government communications, particularly in the context of climate change initiatives, often undermines the perceived credibility of messages. This distrust may stem from past experiences where government programs failed to meet expectations or lacked transparency in their implementation.

Furthermore, skepticism toward government-led communication campaigns is a well-documented challenge, as noted by Kasperson et al. (2023). Their research highlights how perceived risks and uncertainties in government initiatives can exacerbate public doubts, particularly when there is limited evidence of tangible outcomes or when the communication process lacks openness and inclusivity. In this study, the skepticism observed among respondents may reflect deeper concerns about the sincerity and effectiveness of government efforts in addressing climate-related issues.

The presence of skepticism, even among a small minority, underscores the critical importance of building trust in climate communication efforts. Transparency, consistency, and the demonstration of measurable impacts are essential components for countering doubts and fostering public confidence. Additionally, involving local communities in the design and dissemination of messages can help bridge the trust gap, ensuring that communication strategies are not only well-received but also culturally resonant and contextually relevant. Further analysis revealed that 65% of respondents believed that increased information could reduce the prevalence of heat waves in their communities. This underscores the perceived efficacy of communication in not only raising awareness but also shaping adaptive behaviors. Such perceptions highlight the critical role of information dissemination in empowering communities to address climate-related challenges effectively.

This discussion highlights the dual challenge faced by climate communication campaigns: leveraging positive perceptions to drive action while simultaneously addressing and mitigating skepticism. By prioritizing transparency and community engagement, governments can create an environment of trust that enhances the effectiveness of their climate initiatives and reduces resistance from skeptical audiences.
The belief that better information could mitigate heat wave prevalence aligns with the findings of Krantz, King, and Miller (2016), who demonstrated that well-structured information dissemination—especially when it includes clear, actionable advice—can lead to significant reductions in heat-related morbidity and mortality. Information

campaigns that focus on equipping communities with practical knowledge, such as preventive measures and coping strategies, have been shown to enhance individual and collective resilience against extreme weather events. Moreover, the perception of communication as a tool for mitigation reflects the broader principle that knowledge is a precursor to action. When individuals are informed about the causes and consequences of heat waves and are provided with strategies for adaptation and prevention, they are more likely to adopt proactive measures. For example, information on heat waves preparedness, such as staying hydrated, avoiding outdoor activities during peak heat, and recognizing symptoms of heat exhaustion, can save lives and reduce health risks.

This finding also underscores the importance of tailoring communication strategies to meet the specific needs and contexts of target audiences. Effective messaging should not only provide scientific information but also connect it to the audience's lived experiences and local realities. For instance, incorporating culturally relevant examples and local success stories can enhance message reliability and impact. The study's findings reinforce the idea that communication is not just an auxiliary component of climate adaptation strategies but a central tool for driving behavior change and fostering community resilience. Governments and organizations aiming to mitigate the impacts of heat waves must prioritize accessible, relevant, and action-oriented information campaigns as a key element of their intervention efforts.

Conclusion

This study examined the perception of South-East Nigerian women regarding the 2024 Nigerian Federal Ministry of Environment's messages on heat wave adaptation and mitigation. The findings indicate that a majority of respondents viewed the messages as truthful and relevant, suggesting an overall positive reception. Additionally, most respondents believed that increased information dissemination could play a significant role in addressing the impacts of heat waves in their communities. However, a small percentage of respondents expressed skepticism, perceiving the messages as propaganda or deceptive. This highlights the need for enhanced trust-building and transparency in government communication efforts.

In conclusion, the study emphasizes the critical role of effective communication in fostering adaptive behaviours and mitigating climate-related challenges. Strengthening trust and actively involving local communities in message development are recommended to maximize the impact of future climate communication initiatives.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. The Nigerian Federal Ministry of Environment should prioritize transparency in its climate communication efforts, providing evidence-based data and showcasing measurable outcomes from past and ongoing interventions.
2. Government should actively involve local communities, including women, in the development and dissemination of climate messages. This participatory approach ensures that messages are culturally relevant, context-specific, and reflective of the community's needs and priorities.
3. Messages should include clear, practical, and actionable steps that individuals and communities can take to adapt to and mitigate heat waves.

4. The FME should utilize diverse and accessible communication platforms, including traditional media, social media, and community outreach programs, to reach a broader audience.
5. Government should invest in educational programs that raise awareness about the causes, effects, and management of heat waves. Targeted campaigns, workshops, and seminars for women in the South-East can deepen understanding and engagement with climate adaptation measures.
6. The FME should establish mechanisms to regularly assess the effectiveness of communication campaigns. Feedback from target audiences can help refine strategies and ensure that messages remain impactful and relevant.

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