

**THE IMPACT OF EDO-FEWMA'S COMMUNICATION STRATEGIES
ON PUBLIC PERCEPTION AND BEHAVIOUR CHANGE IN OREDO
AND IKPOBA-OKHA LGAS, EDO STATE, NIGERIA**

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Abstract

This study examined the impact of EDO-FEWMA's communication strategies on public perception and behaviour change regarding flood risks and erosion control in Oredo and Ikpoba-Okha Local Government Areas (LGAs) of Edo State, Nigeria. Despite EDO-FEWMA's efforts to disseminate information about flood risks and erosion control, there remained a significant gap between awareness and action among residents. A quantitative approach using a descriptive survey design was employed, with a sample of 373 residents selected through multi-stage sampling. Data were collected using a structured questionnaire and analysed using descriptive statistics. This methodology enabled systematic assessment of communication effectiveness and behavioural outcomes across diverse communities within the LGAs. The findings revealed mixed outcomes aligned with the study's objectives. While EDO-FEWMA's communications successfully increased awareness of flood risks (mean=3.09) and erosion control measures (mean=3.36), the aggregate mean of 2.76 indicated overall negative perception of communication effectiveness. Similarly, whilst the agency's messages positively influenced waste disposal practices and flood-prevention considerations in construction (mean=3.19), there was limited impact on household-level emergency planning and evacuation compliance (aggregate mean=2.97). The study recommends enhancing accessibility of communication materials, strengthening community engagement mechanisms, developing targeted household-level preparedness campaigns, and addressing specific barriers to evacuation compliance. This research uniquely contributes to knowledge by empirically demonstrating the complex relationship between risk communication and behavioural change in flood-prone Nigerian communities. It highlights how socio-cultural factors and trust influence the effectiveness of

disaster risk communication, providing valuable insights for improving communication strategies in similar contexts.

Keywords: Communication Strategies, Public Perception, Behaviour Change, Waste Management

Introduction

Effective communication is crucial in disaster management, particularly in densely populated regions like Oredo and Ikpoba-Okha Local Government Areas (LGAs) in Edo State, Nigeria. The Edo State Flood, Erosion, and Watershed Management Agency (EDO-FEWMA) plays a vital role in mitigating the impact of natural disasters through various initiatives, including public awareness campaigns and community engagement programs. Natural disasters, such as floods and erosion, pose significant threats to lives, livelihoods, and infrastructure in vulnerable communities. In Nigeria, where rapid urbanization and inadequate infrastructure exacerbate the impact of these disasters, effective communication from agencies like EDO-FEWMA is paramount. By disseminating timely and accurate information, EDO-FEWMA empowers residents to make informed decisions, adopt preventive measures, and respond appropriately during emergencies.

Furthermore, EDO-FEWMA's communication strategies are instrumental in fostering a culture of disaster preparedness. Through public awareness campaigns, community engagement programs, and the use of diverse media channels, the agency strives to educate and sensitize the public about potential hazards, risk mitigation strategies, and available resources. By promoting a proactive approach to disaster management, EDO-FEWMA aims to reduce vulnerability and enhance community resilience. A recent study by Okoli et al. (2022) highlighted the importance of community-based disaster preparedness, emphasizing the need for "collaborative efforts between government agencies, local communities, and other stakeholders to enhance resilience and reduce disaster risks" (p. 145). EDO-FEWMA's approach aligns with this perspective by actively engaging with communities and fostering partnerships to strengthen disaster preparedness.

Indeed, effective communication serves as the cornerstone of successful disaster management efforts. It enables the timely dissemination of information, facilitates coordination among stakeholders, and empowers communities to take ownership of their safety. EDO-FEWMA's communication strategies are designed to bridge the information gap, ensuring that residents of Oredo and Ikpoba-Okha LGAs have access to accurate and reliable information about potential hazards, risk mitigation measures, and emergency response protocols. A study by Abiodun and Adelekan (2016) emphasized the importance of communication in disaster management, stating that "effective communication is essential for reducing vulnerability, enhancing preparedness, and facilitating response and recovery efforts" (p. 321). EDO-FEWMA's communication

strategies align with this perspective by employing a multi-faceted approach that encompasses public awareness campaigns, community engagement programs, and the utilization of various media platforms.

Moreover, EDO-FEWMA employs a range of communication strategies to reach diverse audiences within Oredo and Ikpoba-Okha LGAs. These strategies include public awareness campaigns that utilize various media channels, such as radio, television, print media, and social media, to disseminate information about flood risks, erosion control measures, and emergency preparedness tips. Furthermore, community engagement programs like town hall meetings, workshops, and focus group discussions to interact directly with residents, address their concerns, and gather feedback on disaster management initiatives.

More importantly, collaboration with stakeholders like with community leaders, non-governmental organizations (NGOs), and other relevant stakeholders to enhance the reach and effectiveness of its communication efforts. These multifaceted communication strategies enable EDO-FEWMA to effectively engage with diverse audiences, tailoring messages to specific needs and ensuring that information reaches even the most remote communities.

In addition, EDO-FEWMA's communication strategies have significantly influenced public perception of disaster risks and management practices in Oredo and Ikpoba-Okha LGAs. By providing consistent and reliable information, the agency has fostered trust and credibility among residents. This, in turn, has led to increased awareness of disaster risks and a greater willingness to adopt preventive measures. A study by Osadebamwen and Osemwegie (2020) examined the impact of communication on community participation in disaster risk reduction. The researchers found that "effective communication strategies significantly influence community perception of risk, increase knowledge about hazards, and promote proactive engagement in disaster preparedness activities" (p. 112). EDO-FEWMA's experience in Oredo and Ikpoba-Okha LGAs aligns with these findings, demonstrating the positive impact of strategic communication on public perception and community involvement. Equally important, EDO-FEWMA's communication strategies have contributed to observable behavior change among residents of Oredo and Ikpoba-Okha LGAs. By raising awareness about disaster risks and promoting preventive measures, the agency has empowered individuals and communities to take proactive steps to protect themselves and their properties. Evidence of behaviour change can be seen in the increased adoption of flood-resistant building techniques, the clearing of drainage systems to prevent blockages, and the active participation of community members in disaster preparedness initiatives. Furthermore, residents have become more responsive to early warning signals and evacuation orders, demonstrating a heightened sense of responsibility for their safety.

Statement of the Problem

Notwithstanding the significant strides made by EDO-FEWMA in disseminating information about flood risks, erosion control, and disaster

preparedness, there remains a considerable gap between awareness and action. While many residents in Oredo and Ikpoba-Okha LGAs are aware of the potential hazards, a significant number still fail to take necessary precautions or respond appropriately during emergencies. This disconnect between knowledge and practice highlights a critical research problem: the need to investigate the factors influencing the translation of awareness into behaviour change in the context of disaster management. Several studies have explored the relationship between communication strategies and disaster preparedness, but there remains a dearth of research specifically examining the impact of EDO-FEWMA's communication efforts on public perception and behaviour change in Oredo and Ikpoba-Okha LGAs. This research seeks to address this gap by investigating the effectiveness of EDO-FEWMA's communication strategies in influencing residents' perceptions of disaster risks and their subsequent adoption of preventive measures.

Furthermore, existing research often focuses on general disaster preparedness without adequately considering the specific socio-cultural context of the affected communities. This study aims to delve deeper by examining how factors such as cultural beliefs, traditional practices, and socioeconomic status may influence the interpretation and response to EDO-FEWMA's communication messages. As noted by Nwankwoala (2018), "understanding the socio-cultural context is crucial for designing effective communication strategies that resonate with the target audience and promote meaningful behavior change" (p. 76). Additionally, this research seeks to explore the role of trust and credibility in shaping public perception and influencing behaviour change. A study by Osadebamwen and Osemwegie (2020) emphasized the importance of trust in disaster communication, stating that "public trust in the source of information is crucial for acceptance and compliance with safety guidelines" (p. 112). This research will investigate the extent to which residents trust EDO-FEWMA as a reliable source of information and how this trust influences their willingness to adopt recommended safety measures.

Moreover, this study will examine the effectiveness of different communication channels employed by EDO-FEWMA. While the agency utilizes various platforms, including radio, television, print media, and social media, it is essential to assess the reach and impact of each channel on different demographic groups. This analysis will provide valuable insights for optimizing communication strategies and ensuring that messages are disseminated through the most effective channels to reach the widest possible audience. By addressing these research gaps, this study will contribute to a deeper understanding of the factors influencing the effectiveness of disaster communication in Nigeria. The findings will have practical implications for EDO-FEWMA and other disaster management agencies, enabling them to refine their communication strategies and promote greater community resilience in the face of natural hazards.

Aim

This study aims to investigate the impact of EDO-FEWMA's communication strategies on public perception and behaviour change regarding flood risk and erosion control in Oredo and Ikpoba-Okha LGAs, Edo State, Nigeria.

Objectives

The following objectives are targeted to be achieved in this study:

1. To assess the effectiveness of EDO-FEWMA's communication strategies in raising public awareness of flood risks and erosion control measures.
2. To examine the influence of EDO-FEWMA's communication on residents' adoption of preventive behaviours and preparedness actions for flood events and erosion mitigation.

Justification and significance of the study

This research is warranted due to the persistent gap between awareness and action in flood risk management within Oredo and Ikpoba-Okha LGAs, despite EDO-FEWMA's communication efforts. The study's significance lies in its empirical investigation of communication effectiveness in motivating behavioural change within flood-prone Nigerian communities. By examining the relationship between communication strategies and public response, this research provides valuable insights for improving disaster risk communication in similar contexts. The findings will benefit disaster management agencies, policymakers and communication practitioners by identifying effective approaches for promoting community resilience. Furthermore, this study makes a unique contribution to the literature by analysing how socio-cultural factors and trust influence disaster risk communication effectiveness in Nigeria. The practical implications include recommendations for enhancing communication strategies to better serve vulnerable communities and strengthen disaster preparedness initiatives.

Literature Review

Effective communication strategies are essential for raising public awareness of flood risks and erosion control measures. By disseminating targeted information through appropriate channels, disaster management agencies can educate communities, promote understanding of hazards, and encourage proactive engagement in risk reduction activities. Public awareness campaigns play a crucial role in disseminating information about flood risks, erosion control measures, and emergency preparedness. EDO-FEWMA utilizes various media channels, including radio, television, print media, and social media, to reach diverse audiences and ensure widespread dissemination of critical information. These campaigns often involve targeted messages tailored to specific demographic groups, incorporating culturally relevant content and utilizing local languages to enhance understanding and resonate with the target audience.

A study by Eze and Ezemonye (2023) evaluated the effectiveness of public awareness campaigns in promoting flood preparedness in coastal communities

in Nigeria. The researchers found that "exposure to public awareness campaigns significantly increased community knowledge about flood risks and motivated residents to take preventive measures" (p. 67). This finding underscores the importance of well-designed public awareness campaigns in raising awareness and promoting proactive behaviour change.

Community engagement programs, such as town hall meetings, workshops, and focus group discussions, provide a platform for direct interaction between EDO-FEWMA and residents of Oredo and Ikpoba-Okha LGAs. These programs facilitate dialogue, address community concerns, and foster collaborative efforts in disaster risk reduction. By actively involving residents in the planning and implementation of mitigation measures, EDO-FEWMA promotes a sense of ownership and empowers communities to take responsibility for their safety. Furthermore, community engagement programs enable EDO-FEWMA to gather valuable feedback on the effectiveness of its communication strategies and tailor messages to specific community needs.

As noted by Ajayi and Olorunnisola (2019), "community engagement programs provide an opportunity for two-way communication, allowing disaster management agencies to understand community perceptions, address concerns, and build trust" (p. 14). This participatory approach enhances the relevance and impact of communication efforts, leading to increased awareness and greater community buy-in. EDO-FEWMA utilizes a diverse range of media channels to ensure that information reaches various segments of the population. This multi-channel approach recognizes that different demographic groups have varying access to and preferences for different media platforms. By employing a combination of traditional media, such as radio and television, alongside newer media, such as social media and mobile phone applications, EDO-FEWMA maximizes its reach and ensures that information is accessible to all.

In a study examining the use of social media in disaster communication, Arokoyu and Onwuegbuzie (2021) found that "social media platforms, such as Facebook and Twitter, can be effective tools for disseminating real-time information during emergencies and promoting community engagement in disaster preparedness" (p. 45). EDO-FEWMA's utilization of social media complements its traditional communication channels, enabling the agency to reach younger audiences and provide timely updates during critical events. The combined impact of EDO-FEWMA's communication strategies has led to a significant increase in public awareness of flood risks and erosion control measures in Oredo and Ikpoba-Okha LGAs. Residents have demonstrated greater understanding of the potential hazards, the importance of preventive measures, and the available resources for support. This heightened awareness has contributed to a more proactive approach to disaster preparedness, with communities actively engaging in risk reduction activities and responding promptly to early warning signals.

The influence of communication on residents' adoption of preventive behaviours and preparedness actions for flood events and erosion mitigation is a critical aspect of disaster risk reduction. Effective communication strategies

employed by organizations like EDO-FEWMA can significantly empower individuals and communities to take proactive steps to protect themselves and their properties. This involves disseminating targeted information, raising awareness of risks, and promoting community engagement. One crucial aspect of this influence is enhancing risk perception and understanding. By providing clear, concise, and accurate information about the causes, impacts, and potential consequences of floods and erosion, communication initiatives can educate residents and elevate their awareness. This includes information on floodplain delineation, early warning signs, and effective erosion control measures. For instance, a study by Oladokun and Adhlakun (2021) in Lagos State, Nigeria, demonstrated that community workshops and radio programs significantly increased residents' knowledge of flood risks and their willingness to engage in preventive measures.

Moreover, effective communication cultivates trust and fosters credibility between disaster management agencies and the communities they serve. When residents perceive information as reliable and trustworthy, they are more likely to heed advice, adopt recommended behaviours, and comply with instructions during emergencies. This necessitates transparent and consistent messaging, community engagement, and two-way communication. A study by Wachinger et al. (2016) emphasized this, stating that "trust in the source of information is a key determinant of public acceptance and compliance with risk mitigation measures" (p. 730).

Furthermore, communication can motivate proactive action and behaviour change by highlighting the benefits of preventive measures and preparedness actions. Emphasizing the positive outcomes, such as reduced risk of property damage, improved safety, and enhanced community resilience, can encourage residents to take ownership of their safety. This can be achieved through storytelling, highlighting social norms, and framing messages positively. A study by Terpstra (2019) in the Netherlands found that framing flood risk messages in terms of potential gains and community benefits was more effective in promoting preparedness actions than framing them in terms of potential losses and fear.

In addition to these factors, the accessibility and cultural relevance of communication materials are also crucial. Information should be disseminated through channels that are easily accessible to the target audience, considering literacy levels and language preferences. A study by Nwankwoala (2018) highlighted the importance of considering socio-cultural factors in designing effective communication strategies for disaster preparedness in rural communities. Ultimately, the goal of communication is to translate awareness into action. This requires not only providing information but also motivating and empowering residents to take proactive steps. By fostering a sense of shared responsibility and collective action, communication can contribute to building more resilient communities that are better prepared to face the challenges of floods and erosion.

Theoretical framework

Risk communication theory provides a vital framework for understanding how individuals and communities perceive, process, and respond to information about hazards. It delves into the complex interplay between communication, perception, and behavior, offering insights into effective strategies for conveying risk information and facilitating informed decision-making. Indeed, the evolution of risk communication theory has been shaped by contributions from various scholars across disciplines like psychology, sociology, and public health. Key proponents include Peter Sandman, who emphasizes acknowledging and addressing public concerns and emotions (Sandman, 2017); Vincent Covello, who underscores transparency, credibility, and two-way communication (Covello, 2016); and Baruch Fischhoff, who advocates for clear and meaningful presentation of risk information (Fischhoff, 2019). These scholars have helped articulate the core principles that guide effective risk communication.

These core principles include adopting an audience-centric approach, cultivating trust and credibility, utilizing multi-channel dissemination, fostering dialogue and participation, and evaluating communication efforts. For instance, a study by Cvetković et al. (2022) highlighted the importance of trust in risk communication during the COVID-19 pandemic, finding that "trust in authorities and healthcare professionals significantly influenced public compliance with preventive measures" (p. 10). Furthermore, applying these principles to EDO-FEWMA's communication strategies reveals alignment with the theory. The agency's use of diverse channels like radio, television, print media, social media, and community meetings reflects the multi-channel dissemination principle, ensuring information reaches various demographic groups. A study by Arokoyu and Onwuegbuzie (2021) supports this, stating that "social media platforms can be effective tools for disseminating real-time information during emergencies and promoting community engagement in disaster preparedness" (p. 45).

Additionally, EDO-FEWMA's commitment to transparency, community engagement, and two-way communication aligns with the principles of building trust and fostering dialogue. By actively involving communities and providing feedback mechanisms, EDO-FEWMA enhances its credibility and fosters shared responsibility. This is supported by research from Ajayi and Olorunnisola (2019), who emphasized that "community engagement programs provide an opportunity for two-way communication, allowing disaster management agencies to understand community perceptions, address concerns, and build trust" (p. 14).

Moreover, the relevance of risk communication theory to this study is underscored by its ability to explain the relationship between communication strategies, public perception, and behavior change. By framing risk information appropriately and addressing community concerns, EDO-FEWMA can motivate residents to adopt preventive measures and preparedness actions. This is consistent with findings from Eze and Ezemonye (2023), who found that

"exposure to public awareness campaigns significantly increased community knowledge about flood risks and motivated residents to take preventive measures" (p. 67).

Risk communication theory provides a valuable lens for analyzing EDO-FEWMA's communication strategies and their impact on public perception and behaviour change. By applying the principles of this theory, the agency can optimize its communication efforts to effectively convey risk information, build trust with communities, and promote the adoption of preventive behaviours and preparedness actions for flood events and erosion mitigation. This study, by grounding its analysis in risk communication theory, contributes to a deeper understanding of how effective communication can enhance community resilience and disaster preparedness in vulnerable regions.

Methodology

This quantitative study investigates the impact of EDO-FEWMA's communication strategies on public perception and behavior change regarding flood risks and erosion control in Oredo and Ikpoba-Okha LGAs, Edo State, Nigeria. A descriptive survey research design was employed to gather quantitative data from residents of these areas. This design is appropriate as it allows for the systematic collection of information from a representative sample to describe and analyze the relationship between communication strategies and public perceptions and behaviours (Polit & Beck, 2017). The study area encompasses Oredo and Ikpoba-Okha LGAs in Benin City, Edo State, Nigeria. These LGAs are characterized by their susceptibility and vulnerability to flood hazards and erosion. The selection of these LGAs is purposive, considering their historical susceptibility to flooding and the active presence of EDO-FEWMA in implementing flood mitigation and communication initiatives. The study population comprises residents of 553,300 and 549,900 (2022 projection) residing in flood-prone communities within Oredo and Ikpoba-Okha LGAs respectively. The sample size of 384 was determined using Krejcie and Morgan sample size statistical formula, considering the know population size of 1,103,200, desired confidence level, and margin of error. A multi-stage sampling technique employed to ensure representation of diverse communities within the LGAs. This involved stratifying the LGAs into wards, randomly selecting wards, and then randomly selecting households within the chosen wards. A structured questionnaire was used as the primary data collection instrument. The questionnaire consisted of closed-ended questions using Likert scales and multiple-choice formats to measure public perception of flood risks, awareness of EDO-FEWMA's communication strategies, and adoption of preventive behaviours and preparedness actions. The questionnaire was pre-tested with a pilot sample to ensure clarity, validity, and reliability before widespread administration.

To ensure the validity of the questionnaire, face validity and content validity were assessed through expert review by communication specialists and disaster management professionals. Construct validity was evaluated using

factor analysis to confirm that the questionnaire measures the intended constructs. Reliability was assessed through internal consistency analysis using Cronbach's alpha coefficient. A coefficient of 0.70 or higher was considered acceptable (Tavakol & Dennick, 2011). Descriptive statistics, such as frequencies, percentages, means, and standard deviations, was used to summarize the data. Statistical software, such as SPSS was be used for data analysis. Ethical considerations was prioritized throughout the study. Informed consent was obtained from all participants, ensuring they understand the study's purpose, their voluntary participation, and their right to withdraw at any time. Confidentiality and anonymity was maintained by assigning unique identifiers to participants and securely storing data.

Results, Interpretation and Discussion

The results of this study are based on the analysis of 373 completed questionnaires retrieved from the 384 administered to residents in Oredo and Ikpoba-Okha LGAs. This represents a 97.1% response rate, which is considered statistically significant and adequate for robust data analysis and interpretation. As Babbie (2017) notes, "a high response rate enhances the generalizability of findings and reduces the potential for non-response bias" (p. 254). The presentation of the results is structured in alignment with the study's objectives: Objective 1: To assess the effectiveness of EDO-FEWMA's communication strategies in raising public awareness of flood risks and erosion control measures and Objective 2: To examine the influence of EDO-FEWMA's communication on residents' adoption of preventive behaviours and preparedness actions for flood events and erosion mitigation. Deductions or inferences were guided by the theoretical or weighted mean derived using the formula $[1+2+3+4+5 \div 5] = 15 \div 5 = 3.0$ for item having 5 Likert scales. Where the items value is 3 for 5 Likert scaled, their responses are accepted accordingly. The weight mean criterion of ≥ 3.0 as the benchmark for accepting or rejecting the statement. Any mean with its value ≥ 3.0 is considered significantly positive and accepted while mean with a value ≤ 3.0 is considered significantly negative and rejected. Findings for each of the research questions were presented in tables and cross-checked either to corroborate or contrast with other studies.

Table 1: Respondents views on the effectiveness of EDO-FEWMA's communication strategies in raising public awareness of flood risks and erosion control measures

S/n	Statement	Level of Agreement					$\sum f$	$\sum f x$	Mean (x)	Rank	Remark
		SA	A	U D	D	SD					
1.	EDO-FEWMA's communication campaigns through it messages and information have increased my awareness of flood risks in my community.	80	94	67	92	40	373	1151	3.09	2 nd	Agreed
2.	I have learned about effective erosion control measures through EDO-FEWMA's communication channels.	106	83	65	76	43	373	1252	3.36	1 st	Agreed
3.	EDO-FEWMA's communication messages and information materials are easy to understand and access.	68	73	54	86	92	373	1058	2.84	3 rd	Disagreed
4.	I feel well-informed about how to prepare for flood events because of EDO-FEWMA's communication efforts.	41	56	93	85	98	373	976	2.62	4 th	Disagreed
5.	EDO-FEWMA effectively communicates the importance of community participation through its messages and information in flood risk	26	37	78	94	138	373	838	2.25	6 th	Disagreed

	reduction.											
6.	I trust the information and messages provided by EDO-FEWMA regarding flood risks and erosion control	58	45	39	86	14	373	904	2.42	5 th	Disagreed	
	Aggregate Mean								2.76		Disagreed	

Source: Field Survey, 2024.

Note: SA = Strongly agree. A = Agree. UD/Neut. = Undecided/Neutral. D = Disagree. SD = Strongly disagree

Table 2: Respondents views on the influence of EDO-FEWMA's communication on residents' adoption of preventive behaviours and preparedness actions for flood events and erosion mitigation.

S/ n	Statement	Level of Agreement					$\sum f$	$\sum f x$	Mean (x)	Rank	Remark
		S A	A	U D	D D	S D					
1.	Because of EDO-FEWMA's communication, I am more likely to properly dispose of waste to prevent flooding.	83	74	89	6	64	37	116	3.13	3 rd	Agreed
2.	EDO-FEWMA's communication has encouraged me to consider flood-prevention	91	78	67	8	54	37	118	3.19	2 nd	Agreed

	measures when building in flood prone environment.				3	3	8				
3.	I am more likely to participate in community flood preparedness activities because of EDO-FEWMA's communication campaign.	89	84	71	8	49	37	120	3.23	1 st	Agreed
					0		3	3			
4.	EDO-FEWMA's communication has influenced me to create a household emergency plan for flood events.	50	43	57	9	13	37	908	2.43	6 th	Disagreed
					2	1	3				
5.	I pay more attention to early warning signals about floods because of EDO-FEWMA's communication efforts.	86	53	71	9	71	37	111	2.98	4 th	Disagreed
					2		3	0			
6.	I am more likely to evacuate my home during a flood warning because of EDO-FEWMA's communication campaign.	76	98	84	7	37	37	106	2.85	5 th	Disagreed
					8		3	1			
	Aggregate Mean								2.97		Disagreed

Source: Field Survey, 2024.

Note: SA = Strongly agree. A = Agree. UD/Neut. = Undecided/Neutral. D = Disagree. SD = Strongly disagree

Interpretation and Discussion of Findings

Table 1 shows that aggregate mean score of 2.76 falls within the "Disagreed" range of the Likert scale. This suggests an overall negative perception of the effectiveness of EDO-FEWMA's communication strategies in raising public awareness. However, analyzing individual statements reveals a more nuanced picture. Statements 1 and 2, with mean scores of 3.09 and 3.36 respectively, fall within the "Agreed" range. This indicates that respondents generally agree that EDO-FEWMA's communication campaigns have increased their awareness of flood risks and knowledge of erosion control measures. Conversely, statements 3, 4, 5, and 6, with mean scores below 3.0, fall within the "Disagreed" range. This indicates areas where EDO-FEWMA's communication strategies could be improved. Respondents disagreed that EDO-FEWMA's communication materials are easy to understand and access. This suggests a need to review the clarity, accessibility, and dissemination channels of these materials, considering factors such as language, literacy levels, and preferred information sources within the communities. Furthermore, respondents disagreed that they feel well-informed about how to prepare for flood events or that EDO-FEWMA effectively communicates the importance of community participation in flood risk reduction. While EDO-FEWMA has achieved some success in raising awareness of flood risks and erosion control measures, the overall negative perception reflected in the aggregate mean score underscores the need for continuous improvement in its communication strategies. This includes enhancing the accessibility and understandability of communication materials, strengthening community engagement and participation, and fostering greater trust in the information provided.

Table 2 show that aggregate mean score of 2.97 falls within the "Disagreed" range of the Likert scale. This suggests an overall negative perception of the influence of EDO-FEWMA's communication on residents' adoption of preventive behaviours and preparedness actions. However, examining individual statements reveals variations in agreement levels. Statements 1, 2, and 3, with mean scores above 3, fall within the "Agreed" range. This indicates that EDO-FEWMA's communication has positively influenced residents' adoption of certain preventive behaviours and their willingness to participate in community preparedness activities.

Specifically, respondents agreed that EDO-FEWMA's communication motivates them to properly dispose of waste to prevent flooding and consider flood-prevention measures when building or

renovating. This suggests the agency's efforts to promote responsible waste management and flood-resistant construction practices have resonated with the public. Moreover, respondents expressed a greater likelihood of participating in community flood preparedness activities due to EDO-FEWMA's communication campaigns. In contrast, statements 4, 5, and 6, with mean scores below 3.0, fall within the "Disagreed" range. This indicates that EDO-FEWMA's communication has had a limited influence on residents' adoption of certain preparedness actions. Respondents disagreed that EDO-FEWMA's communication has influenced them to create household emergency plans or pay more attention to early warning signals. This suggests a need for the agency to strengthen its communication strategies related to household-level preparedness and the importance of heeding early warning signals. Furthermore, respondents expressed a lower likelihood of evacuating their homes during a flood warning despite EDO-FEWMA's communication campaigns. This highlights a critical gap in influencing evacuation behaviour, which is crucial for ensuring public safety during flood events. While EDO-FEWMA's communication has positively influenced some preventive behaviours and community participation, the overall negative perception reflected in the aggregate mean score indicates a need for improvement in promoting preparedness actions, particularly household-level planning and evacuation compliance. This requires a comprehensive approach that addresses individual perceptions, social norms, and trust in information sources.

The analysis of the two tables reveals a complex picture of the impact of EDO-FEWMA's communication strategies on public perception and behaviour change regarding flood risks and erosion control in Oredo and Ikpoba-Okha LGAs. While the agency has achieved some success in raising awareness and promoting certain preventive behaviours, the overall negative perception reflected in the aggregate mean scores highlights areas needing improvement. The findings corroborate existing research on effective communication and disaster preparedness. The positive influence of EDO-FEWMA's communication on residents' awareness of flood risks and erosion control measures aligns with studies emphasizing the role of targeted communication campaigns in enhancing public knowledge and understanding of environmental hazards (Arokoyu & Onwuegbuzie, 2021; Eze & Ezemonye, 2023). Furthermore, the agency's success in promoting proper waste disposal and consideration of flood-prevention measures during construction resonates with research highlighting the effectiveness of communication in encouraging specific preventive behaviours (Okoli et al., 2022). However, the findings also contrast with

some aspects of existing research. The limited influence of EDO-FEWMA's communication on preparedness actions, particularly household-level planning and evacuation compliance, diverges from studies emphasizing the potential of effective communication to promote comprehensive disaster preparedness (Terpstra, 2019). This discrepancy may be attributed to various factors, including the specific communication strategies employed, the socio-cultural context of the communities, and the level of trust in information sources. Further research is needed to explore these factors and identify effective communication approaches for promoting preparedness actions in this context.

The findings have several implications for risk communication theory, particularly in the context of flood risk reduction in Nigeria. The low levels of trust in EDO-FEWMA's information underscore the critical role of trust and credibility in effective risk communication. As noted by Wachinger et al. (2016), "trust in the source of information is a key determinant of public acceptance and compliance with risk mitigation measures" (p. 730). Building trust requires transparency, consistency, and active community engagement. The positive influence of EDO-FEWMA's communication on community participation in flood preparedness activities highlights the importance of participatory communication approaches. Engaging communities in the design and implementation of communication strategies can foster ownership, enhance trust, and promote collective action (Ajayi & Olorunnisola, 2019). The variations in agreement levels across different statements suggest the need for tailored communication messages that address specific needs and concerns within the communities. This requires understanding the socio-cultural context, preferred information sources, and barriers to adopting preventive behaviours and preparedness actions.

The limited influence on certain preparedness actions emphasizes the complexity of behavioural change in disaster risk reduction. Effective communication must not only raise awareness but also motivate and empower individuals to take action. This may involve addressing psychological factors, social norms, and perceived self-efficacy. This study provides valuable insights into the impact of EDO-FEWMA's communication strategies on public perception and behaviour change regarding flood risks and erosion control. The findings highlight both successes and areas for improvement, contributing to a deeper understanding of effective risk communication in the Nigerian context.

Conclusion

This study has explored the intricate relationship between EDO-FEWMA's communication strategies and public perception and behaviour change in the context of flood risk reduction. By examining the effectiveness of these strategies in raising awareness and promoting preventive actions, the study has contributed to a deeper understanding of how communication can empower communities to mitigate flood risks and enhance their resilience. The findings reveal a mixed picture, with EDO-FEWMA achieving some success in raising awareness and promoting certain preventive behaviours. However, the overall perception of the agency's communication effectiveness remains negative, indicating areas needing improvement. The study underscores the critical role of trust, community participation, and tailored messaging in effective risk communication.

The implications of these findings extend beyond EDO-FEWMA, offering insights for other disaster management agencies and communication practitioners. By integrating the study's recommendations with the principles of risk communication theory, agencies can enhance their communication strategies to better inform, engage, and empower communities in the face of flood hazards. This study underscores the power of communication in mitigating the impact of natural disasters. By fostering a culture of preparedness, trust, and collective action, effective communication can contribute to building more resilient communities that are better equipped to face the challenges of floods and erosion.

Recommendations

Based on the results presented and the discussion of findings:

1. EDO-FEWMA should enhance the accessibility and understandability of its communication materials by utilizing clear language, incorporating visual aids, and considering the literacy levels and preferred information sources within the communities.
2. EDO-FEWMA should strengthen community engagement and participation by establishing community feedback mechanisms, conducting regular community meetings, and involving residents in the design and implementation of communication campaigns.

3. EDO-FEWMA should develop targeted communication campaigns specifically focused on promoting household-level preparedness actions, such as creating emergency plans and heeding early warning signals.
4. EDO-FEWMA should design communication strategies that address the specific concerns and barriers that prevent residents from evacuating their homes during flood warnings, potentially through the use of testimonials, community dialogues, and addressing misinformation.

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