Addressing the Impact of Complex English Use in Communicating Climate Change in Nigerian Communities Through Contextual Understanding

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Abstract: The effective implementation of preparedness and response strategies toward climate change resilience has evolved into a technical, sociopolitical, and communication issue. We argue that, for climate communication to effectively contribute to community resilience, it demands meaningful dialogue and engagement to facilitate understanding. Using the risk communication theory, we assessed the impact of complex English language on climate change understanding in Nigerian communities where local languages are predominant. Through surveys and semi-structured interviews, we found that current communication strategies are ineffective and misaligned with the local context, traditional knowledge systems, and specific community concerns, therefore marginalizing local actors from meaningful participation. The translation of climate communication into climate change action is challenging for local actors due to prevailing exclusion from discussion and a lack of engagement, which contributes to misunderstanding and poor climate change action. The study indicates that enhancing climate change communication in Nigeria necessitates the development of integrative strategies tailored to the language, cultural, and educational context that will encourage the local actors to participate effectively in this discussion. The paper recommends translating information into local languages and integrating local proverbs and mythological interpretations that can be positively employed to combat climate change within these communities more organically.

Keywords: climate change communication; complex English; language barriers; cultural disconnect; information misalignment

1. Introduction

Climate change is a devastating risk affecting communities worldwide, with significant social, economic, and environmental impacts. In Nigeria, recurrent climate-related flooding and droughts pose a threat to both urban and rural communities due to the country's poor adaptation strategies [1,2]. These climate-related hazards have heightened the susceptibilities of smallholders and subsistence farmers, jeopardising agriculture and other climate-sensitive sectors that are fundamental to Nigeria's economy [3,4]. The decline in agricultural production has placed Nigeria among the foremost countries facing severe food insecurity [5], further intensifying issues related to population displacement and unregulated migration [6]. The Nigerian government has recognised the importance of

addressing climate-related risks, and has developed policies and frameworks to guide national and local responses [7]. However, the effectiveness of these policies depends on the ability to communicate them in a way that is accessible and relevant to a diverse audience.

Effective communication strategies are essential to mitigate and adapt to the impacts of climate change, as well as enhance community resilience through collaborative endeavour among key stakeholders [8]. Intergovernmental Panel on Climate Change (IPCC) discourses that are based on global languages have been institutionalised in public debate with the objective of disseminating information to improve our understanding of climate change issues [9–12]. Several countries are articulating messages based on IPCC reports. In other words, governments, media, NGOs, and other interest groups have developed speeches, news reports, blogs, magazines, pamphlets, and national policies based on IPCC technical and complex global languages. This situation has created a challenge for national and local communicators whose job is to communicate climate change in a way that the public can receive, understand, and respond to messages. As such, we argue for risk communication, which is essential in disseminating information among stakeholders and the broader at-risk communities with the intent of helping the local population take appropriate action [13,14].

The local climate change communication landscape in Nigeria is shaped by a complex interplay of socio-economic, linguistic, and cultural factors. The socio-economic disparity across Nigeria [15] and the unequal distribution of basic amenities limit information outreach, resulting in many vulnerable populations being inadequately informed about climate change and the available mitigation and adaptation strategies. Limited access to climate change information is prevalent in regions with poor infrastructure and educational facilities, resulting in a constrained understanding among local communities regarding the causes and effects of climate change [16]. In Nigeria, the media environment is multifaceted, encompassing radio, television, newspapers, and social media as primary media for the distribution of climate change information. Nevertheless, discussions surrounding climate change in these media outlets frequently adopt a technical language that may not be readily comprehensible to the public [17]. A considerable proportion of the Nigerian population only has basic formal education, which complicates the dissemination of climate change information that depends on technical terminologies. Radio remains one of the most accessible media, particularly in rural areas, where climate change is sometimes broadcast in the local language [18]. Religious beliefs and traditional knowledge systems play a significant role in how climate change is perceived and understood. Belief systems may influence the reception and acceptance of scientific explanations regarding climate change as a risk and adaptation action [19].

The ethnic, cultural, and linguistic diversity within Nigerian communities presents a unique challenge to climate change communication. Studies suggest that messages about climate change often fail to resonate with local communities in Nigeria because they are not tailored to the cultural and linguistic contexts of these groups [20,21]. English is the official language in Nigeria and is used in formal education, government, NGOs, and media communications. However, it is not the first language for the majority of the population. Many Nigerians are more comfortable communicating in their indigenous languages, such as Hausa, Yoruba, Igbo, and others. With over 250 distinct indigenous languages spoken across the country, the linguistic diversity can create barriers to understanding when climate change information is disseminated primarily in English [22]. The use of the global language, particularly when it is complex, can hinder the effective dissemination of climate change information in multicultural and multilingual settings [23]. The complexity we refer to involves the specialised concepts used in discussing climate change, such as climate change, carbon emission, carbon footprint, etc. Many indigenous languages, including the over 250 native languages in Nigeria, were developed long before the advent of modern

climate science and global environmental changes brought about by industrialisation [22]. Consequently, they lack an established vocabulary and direct equivalent to express the intricate concepts associated with climate change and its activities. Language often mirrors the cultural experiences and historical contexts of its speakers [24]. Hence, communicating climate change in complex English negates the pivotal influences originating from cultural and linguistic diversity that constitutes the framework through which individuals perceive climate change at the community level [25].

Although scholars have studied how local actors' perceptions influence their behaviours and actions towards climate change in Nigeria [26–28], the influence of complex English language on actors' perceptions and behaviours deserves further exploration. This is important because discourses have elements of unequal power relations, where language is integral to marginalising, excluding, and maintaining a dominant position in a community [29]. Language is a powerful tool that shapes the way we think, perceive, and communicate [30,31]. Exerting control over language and discourse empowers individuals to define the framework and structure of climate risk communication [32].

In this paper, we will analyse the impact of complex English language in climate change communication in Nigerian communities where local languages are predominantly spoken. By using risk communication theory, surveys, and semi-structured interviews, this paper aims to analyse local actors' perspectives regarding the efficacy of current climate change communication strategies in their communities. The key question guiding this research is as follows: What is the impact of complex English language use in communicating climate change in communities where local language is predominantly spoken? This paper will suggest measures that can be put in place to enhance more effective and culturally appropriate climate change communication in Nigerian communities.

2. Theoretical Approach

To answer our research questions, we discuss perspectives from the risk communication theory, which is pertinent to understanding how communicators might adapt messages about a potential harm to influence decision-making [33]. The risk communication theory encourages engaging audiences through meaningful dialogue and deliberation with the expectation that this would change behaviour [34,35]. Some scholars argue that effective risk communication involves more than just transmitting factual information; it must also address the obstacles embedded in psychological and socio-cultural issues such as audiences' emotions, beliefs, cultural norms, and values [36]. Others argue that a message should be clear, trustworthy, and relevant to the audience [37–39]. In the case of climate change, making the message relevant and potentially leading to adequate responses, it is important to use a related concept or discourse where the meaning and scope are clear, as complex language can lead to confusion and misinterpretation.

Numerous studies have explored aspects of risk communication relevant for climate change discourse, though few have explicitly focused on Nigeria. Moser [40] emphasised the significance of tailoring communication strategies to target audiences' cultural and linguistic contexts to increase message understanding through local languages and symbols. In the realm of language use in climate change, some scholars have explored the challenges faced by heterogeneous groups in interpreting information issued in a non-context-specific narrative [41,42]. These studies found that language barriers can both clarify and distort understanding, leading to varied climate change responses across different communities. Bäckstrand and Lövbrand [43] emphasise that discourse about climate change governance is embedded in scientific practices and techniques that are imagined and interpreted by a multitude of actors present at UN climate conferences. Their study found that these discourses become deeply institutionalised in global policy arenas and articulated by agents

spanning the public–private and local–global divide. Makwanya at al. [44] examined the complexities of transferring climate change discourses from one setting or location to another. Their study highlights the importance of considering cultural and linguistic diversity in climate change communication, as neglecting to do so could lead to divergent perspectives and miscommunications. Hall [45] examined the use of emotive language in climate change communication, suggesting that using culturally relevant narratives can foster a deeper connection to climate-related risks and promote proactive behaviour change.

Existing literature on climate change communication in African scenarios points to a variety of barriers, ranging from local language, spirituality, socio-economic variables, and culture. Ombati [46] examined the role of culture in mitigating and adapting to climate change, demonstrating how individuals employ unique practices and a range of techniques to influence spirituality in relation to environmental management. The study highlights the need for local languages and culturally appropriate messages to improve the effectiveness of communication strategies. Sanganyado, Teta, and Masiri [47] emphasized the importance of tailoring communication strategies to cultural contexts, suggesting that using traditional knowledge shaped by African traditional worldviews, especially in regions with strong indigenous cultures, can enhance message comprehension. Their study found that people's worldview and belief in traditional gods often result in indifferent and reduced engagement in mitigation and adaptation of climate change. Boakye, Wiafe, and Frempong [48] discovered that major barriers to climate change communication include conflicting values and social dilemmas, psychological distance, and emotional engagement.

Research specific to Nigeria includes work by Apata [49] who investigated factors influencing farmers' perception and response to climate change, finding a significant gap in awareness and understanding driven by socio-economic variables. Abegunde [50] surveyed 416 adult residents in three rural communities in Osun State, Nigeria, and found that 196 of the respondents believed climate change was a punishment of the gods for human sin. The study indicates that tradition influenced residents' perspectives on perceived causes and responses to climate change. Despite the valuable insights provided by the existing literature on language barriers in climate change communication, few studies address the impact of complex English discourses. This study will fill this gap by addressing the impact of using complex English discourse to communicate climate change in communities where the local language is predominantly spoken. There is also limited literature that examines the intersection of cultural biases and climate change communication processes among populations with basic education in Nigerian communities. This research aims to contribute to the effectiveness of climate change communication in Nigerian communities.

3. Materials and Methods

This study utilised surveys (see Supplementary Materials) and semi-structured interviews to assess the impact of using complex English language to communicate climate change in communities located in Anambra State, southeast Nigeria, where the local language is predominantly spoken. Anambra State has a literacy rate of 92.11%, while the Southeast region has a modest English proficiency score of 535 (according to the EF English Proficiency Index, Nigeria ranked 30 out of 116 countries with an EF EPI score of 557 (EF English, 2024); the Southeast had an EPI score of 535, which represents a moderate proficiency of English, according to EF English.). The Southeast region is significantly impacted by flooding and mild droughts. We conducted this research in two phases using an open survey and semi-structured interviews for a nuanced exploration of awareness and perception, attitudes, and beliefs. The survey was constructed to elicit insights into respondents' knowledge and awareness of climate change, their perception of the communication discourses, how effective the current strategies for communicating about climate

change are, the reliability of information sources, and their participation in climate change discussion, as well as activities.

This study employed a non-random sampling approach to ensure a representative mix of demographics, including age, gender, education level, and occupation. The primary reason for this more targeted selection process was to ensure that the follow-up interviews would be meaningful and informative, providing deeper insights into the research questions. To ensure that the survey reached individuals with a certain level of education and internet access, the link was distributed online. We also shared the link with people in a popular WhatsApp forum, "God is Good Sports Club" (which is a known forum for sports, health, agricultural, environmental, business, politics, and real estate enthusiasts across the Anambra state). We chose this platform because it attracts users who are likely to meet the study's criteria, making it easier to collect relevant data from a specific demographic group. This forum has 900 members, all of whom claim to come from Southeast Nigeria.

Only 142 respondents completed the survey in full. Twenty participants started but did not finish. We did not include these results in our findings. In the survey questions, we asked respondents to indicate interest in further interviews. Twenty-one people expressed interest in an in-depth interview: four females and seventeen males. However, we selected only 15 participants who indicated a high level of engagement or unique insights during the survey for follow-up interviews, including all 4 females. The 15 participants comprised a diverse range of individuals, including 1 master's student, 1 researcher, 1 engineer, 1 entrepreneur, 2 traders, 2 community leaders, 3 local government workers, and 4 farmers. We selected these participants based on their engagement with climate change issues and their level of knowledge in comparison to other survey respondents.

This diverse participant pool was intended to capture a wide array of perspectives from different communities and socio-economic backgrounds. The interviews were designed to delve deeper into the themes identified in the survey responses. We focused on several key areas, including the impact of complex English language use on climate change communication, the most effective media for disseminating climate change information both locally and nationally, and finally, measures to improve climate change communication. The interviews provided deeper insights into the barriers to effective climate change information from the participants' perspectives. The interviews were conducted face-to-face. All interviews were recorded and transcribed afterwards.

To mitigate the risk of confirmation bias, we designed open-ended surveys and interview questions. In designing the survey, we aimed to ensure that questions were neutrally worded to elicit genuine insights from participants. The interview questions were designed to encourage participants to share their perspectives and experiences freely, and allowed us to capture a wide range of insights, beyond those that are directly aligned with the study hypothesis. We also try our best to ensure that our interpretations are grounded in the participants' actual responses rather than our expectations.

The data collected from both surveys and interviews were analysed. We employed an inductive approach to thematic analysis to identify patterns and themes within the interview dataset using NVivo software. This approach allowed for themes to emerge organically from the data, rather than being determined. The process began with a thorough reading of the transcripts to familiarise ourselves with their content. We then conducted coding, where initial codes were assigned to the segments of the text that appeared relevant to our questions. The process was guided by our research questions. As patterns and recurring ideas were identified, we grouped similar codes into broader categories, which eventually formed the basis for our themes. This was an iterative process, where we continuously refined and adjusted themes to ensure they accurately represented the data.

4. Results

Based on the research question, what is the impact of complex English discourse use in communicating climate change in communities where local language is predominantly spoken? We will be presenting the results obtained from the survey first and then the interview. We will also present suggested measures that can be put in place to enhance more effective and culturally appropriate climate change communication in Nigerian communities.

4.1. Survey Results

Our survey results reveal that 100% of respondents have heard about climate change, showing general awareness. However, the analysis of our data reveals a striking disconnect between climate change awareness and understanding among the respondents. Only 45% of participants felt they understood the concept, while 55% admitted to a lack of understanding. The significant variance in depth of understanding suggests a gap even among educated groups, which includes 25% of participants who are academically advanced above the bachelor's level, 54% at the bachelor's level, and 21% at the O level (Figure 1). When it comes to the causes of climate change, the results from surveys reveal that a significant portion (50%) of respondents view climate change as related to weather, while 37% associate it with other beliefs, such as deities and supernatural beings. Only a small percentage recognise the scientific causes of climate change, such as greenhouse gases (7%), fossil fuel burning (4%), and anthropogenic activities (2%). While this suggests that educational background may influence the perception and awareness of climate risk, it also reveals misconceptions or superficial understanding among even the most educated individuals.
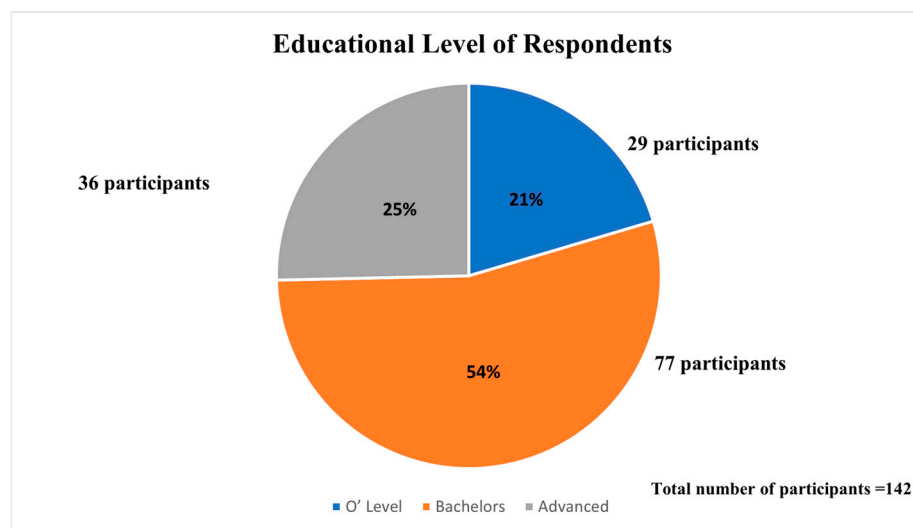
Figure 1. A pie chart of the education level amongst the participants.

Despite a considerably higher level of public awareness, the clarity and understanding of climate change information remain inadequate. Our survey reveals several critical insights into the sources of information, clarity of messages in English, and trust in information sources that can be causing the misunderstanding. Only 48% of the respondents found the messages clear and understandable, while 55% reported confusion. For those who understood the messages, 42.3% attributed their comprehension to the use of pictures and images depicting affected areas or communities, while 31% cited personal experiences with events like flooding as reinforcing their understanding. Moreover, 25% cited understandable language as a factor, whereas reading reports contributed the least, at 1.7%. Conversely, the lack of clarity was primarily due to language barriers, with 32% of respondents finding

the language used in communications incomprehensible. Additionally, 25% expressed distrust in government agencies, exacerbated by past inaccuracies and vague information, which 21% of respondents found unhelpful. About 30% of respondents perceived climate change as fictional due to the absence of relatable events, and 7% noted that incorrect predictions by agencies like NIMET further contributed to misunderstandings. Trust in information sources varied, with local radio being the most trusted at 40.9%. On the other hand, 23.9% of respondents trusted community and social meetings, while 18.3% trusted local NGOs. Newspapers and private television were less trusted, at 9.9% and 7%, respectively.

The type of sources accessed for climate change information varied widely among respondents. News media comprising radio, private TV, and social media (54.9%) stood out as the key channel through which individuals become aware of climate change information, surpassing government agencies and institutions (20.1%), which also play a significant role. These key channels report climate change information mostly in English, which indicates the high rate of misunderstanding regarding climate change. Other media, such as local organisations and NGOs (15%) and community meetings, which account for only 10% of the responses, are significantly less dominant.

In addition, 5% of survey respondents reported an optimal understanding of climate change information in English, while 25% indicated a sub-optimal comprehension. A significant number of survey respondents (60%) reported a partial understanding, while 10% reported difficulty in understanding climate change information presented in English. More than half of participants (62%) attributed the lack of understanding to complex vocabulary, while 59% reported challenges due to ambiguous messages. Moreover, 57% infer that information presented in English lacks context, while 51% argue that it lacks cultural relevance.

Almost all respondents (87%) preferred receiving information in their local language, 10% were comfortable with bilingual materials, and 3% preferred English. Despite the preference for the local language, none of the respondents reported having always received climate change information in the local language. Only 25% of participants often receive climate change information in their local language. In comparison, 30% reported occasional receipt, 33% claimed they rarely do, and 12% stated that they have never received climate change information in their local language. This might be impacting participation in climate change discussion and activities. Of the respondents, 45% expressed a lack of interest in climate change discussion, 30% were somewhat interested, while only 15% were interested in participating in climate change discussion. Regarding engagement in climate change activities, 21% were not aware of any activities, 27% were not engaged, 37% were somewhat engaged, while only 15% were actively involved in climate change activities.

4.2. Interview Results

The semi-structured interviews provided additional insights into the impacts of using the English language to communicate climate change in communities where the local language is predominant. The findings from the interview suggest that the English-centric communication strategy lacks cultural alignment, thereby excluding local actors from engaging in climate change discussion, which further hinders their understanding of it.

While all the 15 participants interviewed claim to understand climate change, there is a variance in the level of knowledge, especially regarding the causes of climate change and the broader ecological and sociopolitical impacts that can influence climate change action. Twelve of the interviewees believe that climate change is caused by human activities; the remaining three claim that climate change is a result of natural and human activities. The three interviewees highlighted the role of history and natural cycles in shaping the

perception of climate change. According to one participant, "Our ancestors told us that our communities have been flooded for hundreds of years. So, it's not surprising that people think climate change is caused by natural cycles rather than human actions" (Interviewee 11).

The twelve participants who attributed climate change to human activity cited bush burning, deforestation, coal burning, improper waste management, and pollution as major causes of climate change. Participants viewed deforestation as both a challenge and a necessity, with tradition and the lack of alternative energy sources driving people to cut trees for fuelwood. According to one participant, "This may sound funny, but some people do not know the effect of cutting trees, and they also believe that food cooked with fuelwood tastes better" (Interviewee 1). Another participant asserts, "Some people know that cutting trees and using firewood is not good for the environment, but without electricity and other affordable clean energy, what choice do people have?" (Interviewee 10).

Participants suggest that bush burning is both an agricultural practice and a culturally significant tradition integral to the people's way of life. According to one participant, "Bush burning is how many farmers clear the field and prepare their lands for the farming season. These farmers do not understand how bush burning affects the environment" (Interviewee 6). Other participants also claim that people burn bush to hunt bushmeat, which is part of the tradition. One participant claims that "Hunting bushmeat for food at family gatherings is a tradition, and bush burning helps drive animals out to hunt" (Interviewee 4).

4.2.1. Ineffective Communication

The interview participants linked ineffective communication strategies to climate change information sources. Participants suggest that young people can use the internet, laptops, and smartphones to watch interactive videos and infographics, which can easily aid them in understanding complex English discourse. According to one participant, "The younger ones are more informed about climate change because they can watch videos using their computers and smartphones (Interviewee 13).

In contrast, participants suggest that the older generation has less access to the internet and relies more on traditional media such as radio and newspapers, which makes it harder for them to understand the complex English discourses. They claim that climate change information is mostly available on the radio and in newspapers due to their extensive reach and accessibility, especially in rural areas. According to one participant, "We mostly get updates from the radio because it is cheaper to use with a battery even without electricity, and it is easier to understand messages from the radio because the information sometimes comes in our local language" (Interviewee 5). Another participant claimed, "I read newspapers to learn about climate change, but sometimes the words are too difficult to understand" (Interviewee 3). Participants suggest that information from government agencies is difficult to understand because of the terms they use. The terms identified by participants as difficult include "biodiversity, carbon emission, carbon footprint, carbon neutral, carbon sequestration, mitigation, and sustainability.".

Participants linked the difficulty of understanding climate change to the complex English language. They suggested that climate change information available only in English is challenging for people who are less literate or understand only the local language. One participant explained, "So many people that are affected by climate change do not have the right education to deal with it. This is not only about having a degree but also having the knowledge about the causes and impact of climate change" (Interviewee 13). The claim is that the less literate often rely on direct personal experiences and traditional knowledge passed down through generations to understand climate change. According to one participant, "As an elder, I will say that our understanding of climate change comes

from what we have lived through: years of flood, drought, and changes in our farming seasons. Our ancestors passed down this knowledge as a guide" (Interviewee 6).

The gap in environmental literacy is further exacerbated by the disparity in economic conditions, as many people cannot afford formal education or access to information through media like television. One participant noted, "Many people, due to poverty, cannot afford to go to school, and at the same time, some people do not have the resources to afford TV or internet" (Interviewee 13). These people rely only on community meetings and local radio for climate change information.

4.2.2. Communication Misalignment

Participants suggested that information from government agencies rarely resonates with vulnerable local actors due to its global perspective, which contributes to the sense of detachment and irrelevance to their daily lives. For example, one participant claimed, "I attended a climate change meeting in our local government one time, and the speaker talked about carbon emissions and sustainability. I could see the confusion in people's faces because these terms were not explained. I really felt like the information was not meant for our people." (Interviewee 1). Another participant claimed, "Some experts often talk about the rise in sea levels and global temperature increase but do not link them to people's immediate challenges, like the increase in food prices and poor fishing that directly affect people's livelihoods." (Interviewee 14). Another participant claimed, "Government agencies talk about the need to reduce plastic use or pollution from second hand vehicles, but many people in the local communities do not even own cars or use plastics." (Interviewee 15).

This disconnect is further exacerbated by the emphasis on mitigation strategies without practical alternatives. For example, government messages often advocate for reducing deforestation and use of firewood yet fail to address the lack of alternative energy sources. According to one participant, "If you tell people to stop cutting trees for firewood, you are practically asking them to starve" (Interviewee 9). This remark highlights the need for solutions that consider local economic conditions.

Participants suggested that climate change information, especially from local organisations and NGOs, is ineffective because it is often delivered in sporadic bursts, lacking the consistency needed to maintain awareness and understanding. One participant observed, "There is a general lack of continuous engagement by the local organisation and local NGOs; people receive information in an inconsistent manner, and this does not help maintain awareness because they quickly forget" (Interviewee 11). Interview participants also suggested that local organisations and NGOs lack the required resources for continuous climate change communication. One participant stated, "I heard that local organisations and NGOs lack the resources required to engage community leaders and ensure consistent dissemination of information about climate change across various communities" (Interviewee 15). This has led to a lack of continuous engagement and organised forums for climate change discussion in local communities.

4.2.3. Cultural Disconnect

The interview revealed that the mythical perception of climate change presents a barrier to effective climate risk communication in local communities. These perceptions are deeply rooted in cultural beliefs and traditional knowledge systems, and shape how local communities understand and respond to climate phenomena.

Participants observed that despite the recognition of human activities as contributors to climate change, indigenous knowledge and cultural interpretations remain heavily influential. For instance, rural farmers have long observed climate patterns and developed

their own understanding; they came up with the term "Ntughari Igwe", which translates to "the changing of the clouds (heavens)". This phrase reflects their perception of climate change as a natural and divine process. One participant explained, "Our elders have always been attuned to the changes happening in the skies. They started calling it "Ntughari Igwe". This is how we know the climate is changing and no longer predictable like it used to be" (Interviewee 11). These cultural interpretations often attribute climate change to deities such as Amadioha, the traditional god associated with the sun, thunder, and lightning. This belief system frames climate change as a phenomenon beyond human control. As one participant expressed, "When the cloud changes in ways we cannot predict, some of us say it is Amadioha at work. To us, this is how we understand changes in climate as something that belongs to gods and is beyond human control" (Interviewee 7). Participants noted that people also equate unpredictable weather to the mood of the gods or the anger of the earth, thereby discouraging proactive measures. The belief that climate change is a divine or natural phenomenon can make it challenging to convince people of human responsibility. As one participant observed, "If you really believe in God or our traditional gods, it is difficult to believe that we humans are causing this change. People use proverbs such as "the sun is getting more intense" or "the rain is betraying us" to reinforce their beliefs" (Interviewee 11). While these narratives provide a cultural understanding, they can hinder the acceptance of scientific explanation and the urgency of human solutions. As one participant observed, "These cultural interpretations help in understanding but might also limit seeing climate change as a global issue that needs broader actions" (Interviewee 11).

4.3. Measures to Enhance More Effective Climate Change Communication

When it comes to measures to enhance climate change communication, 70% of survey respondents expressed that receiving climate change information in their local languages will improve understanding. Additionally, 62% of respondents recognise interactive forms of communication, such as community meetings, local organisation workshops, and sensitisation as the most effective communication strategy. Moreover, 40% of the respondents also recognised community and social meetings as the most trusted sources of climate change information, followed by local radio broadcasts (30%), which were perceived to sometimes include local language as well as being more accessible than complex media and official government information. Despite the effectiveness and trustworthiness of these sources, the survey highlighted only 15% and 10% use of local organisation workshops and community meetings, respectively. On the other hand, 54.9% of participants received climate change information via news media, while 20.1% receive information from official government sources.

Through the interview, participants suggested a few measures that can be used to enhance climate change communication such as the use of local language and interpretations, aligning information with local knowledge and experience, utilizing local channels for communication, improving literacy and access to information, and engaging local trusted sources.

4.3.1. Use of Local Language and Proverbs

Interview participants suggested that communicating climate change in the local language will make it accessible to everyone in the community. They suggest that direct translation is insufficient and that we should adapt climate change content to reflect culture and tradition that resonate with community values and beliefs. For example, using proverbs that emphasise the importance of preserving environmental resources, especially the ones that refer to the earth as a mother who should be cared for, is essential. According to one participant, "Using proverbs like 'A man who throws dirt against the wind soils his own face' makes the conversation about waste management and its impact on climate change

much more relatable" (Interviewee 12). Another participant claimed that "When messages are conveyed in our local languages using familiar stories, they resonate better. Like using a proverb that ties soil fertility to respectful land use" (interviewee 3). Other participants suggest using proverbs that depict nature as a nurturer and destroyer in climate change communication. For instance, one participant claims, "Using the proverb, 'The rivers are our brothers; they quench our thirst', can emphasise the importance of conserving our water resources." (Interviewee 2). Such a proverb could help frame discussions of how climate change is leading to water scarcity.

4.3.2. Aligning Information with Local Knowledge and Experiences

Participants suggest aligning climate change messages to local practices and experiences to make communication more effective. For example, one participant claimed, "We need more discussions about the immediate economic impacts of poor agricultural production that affect our people's day-to-day lives instead of a global perspective that is less relevant to our people" (Interviewee 1). Some participants suggested using campaigns local people can relate to. According to one participant, "There was a campaign last year that used images of dried-up rivers and cracked earth—places people recognised. They tied these images with a message on the need to conserve water and plant more trees. Seeing familiar places change because of climate change really hit home. It was quite impactful because it made climate change personal and local" (Interviewee 2). Another participant claimed, "At the local government, we once conducted a campaign using images of local landscapes—before and after photos showing reservoirs drying up—and correlating it with impacts on farmers' crops and fish farming. This visual representation, accompanied by narratives in Igbo, helped a lot of people understand and feel the impact personally; it drove the message home. We got a lot of positive feedback afterwards" (Interviewee 10).

4.3.3. Use of Local Channels (Community Meetings and Social Gathering)

Participants suggested community meetings and social gatherings as platforms for discussing climate change to provide opportunities for interactive dialogue. According to one participant, "Regular community meetings to discuss climate change would enhance people's understanding and engagement (Interviewee 1). Another participant claimed, "I think it is important to make climate change discussion a part of our weekly market meetings or church services. The discussion will have a deeper impact if it relates directly to farming, fishing, or even local festivities (Interviewee 3). Some participants suggested that sharing climate change information from experts during community meetings and workshops is important and will encourage community-based solutions. According to one participant, "In our farming union, we often invite experts to give talks that will help farmers manage issues we have been facing because of climate change in the last several years." (Interviewee 14).

4.3.4. Improving Literacy and Access to Information

Participants suggested that the government and local communities should work together to implement educational programs aimed at improving literacy levels. According to one participant, "We need to educate people more about climate change so that they can easily connect global scientific consensus with local impacts and solutions" (Interviewee 2). Participants suggested increasing access to informational resources, especially for vulnerable community members that do not have access to news media. One participant claimed, "In our area, there's a growing interest among community members to learn more because we see the effects, but the information is not always accessible or not relatable" (Interviewee 1). This entails making information available at community centres.

4.3.5. Engaging Local Trusted Actors

Participants suggested engaging local leaders, elders, and respected figures in the community for climate change communication, as their endorsement can lend credibility to the information. One participant claimed, "It's important to communicate climate change using people that the local population trusts. Engaging respected community leaders and church leaders to spread the word could make a big difference, as their words are taken very seriously here in our communities (Interviewee 3). Another participant claimed, "Using community members that are well respected in the local market squares to communicate climate change can ensure that the message of climate change is not just understood but felt" (Interviewee 12).

5. Discussion

The study's main goal was to analyse the impact of English discourse use in communicating climate change in Nigerian local communities where local languages are predominantly spoken and then suggest measures for effective communication. Our findings reveal challenges and opportunities, particularly when viewed through the lens of risk communication theory. The finding highlights the need for culturally and linguistically tailored strategies to improve the communication on climate-related issues in Nigerian communities.

5.1. Impact of Using Complex English Language in Climate Change Communication

The survey and interview results reveal that the use of complex English in communicating climate change poses a barrier to effective dissemination of information in Nigerian communities where local language is predominantly spoken. This aligns with findings by Nerlich, Koteyko, and Brown [41] who emphasise the dual role of language in clarifying and distorting understandings of risk issues. We found a substantial gap in climate change engagement, with many respondents expressing disinterest in the discussion due to a language barrier. The disengagement observed among respondents suggests that vital information about climate change and measures to respond to it is not reaching the community effectively. A poor level of understanding and low-level participation in climate-related activities highlights the urgent need for more accessible and engaging communication strategies. The complexity of the English language can alienate community members from engaging in discussion, as well as exacerbate their feelings of exclusion and marginalisation, both for the literate and for the less literate. This is consistent with Renn and Levine [39] who argue that messages must be clear and relevant to the audience's context.

The reliance on news media and government agencies that use complex English language with an often-global focus poses significant challenges for effective climate change communication in local communities. This approach tends to overlook the specific needs and context of these communities, making the communication less relevant for community members, thereby limiting its effectiveness. The use of technical jargon and abstract concepts common in global climate discourse can alienate individuals who are not proficient in English or familiar with scientific terminology. When climate change is framed in a global focus, it can lead local community members to perceive climate change as a distant problem in terms of space, which does not directly impact their immediate environment and daily life experiences. Boakye, Wiafe, and Frempong [48] highlight that conflicting values and psychological distance are major barriers to effective climate change communication. Communicating climate change through a global focus can exacerbate local community members' psychological distance to climate change understanding. For instance, while the global discussion may emphasise polar ice melt and international carbon trading schemes, local communities are more concerned with immediate issues such as

increased flooding or crop failures. By not addressing these local concerns, communication efforts miss opportunities to engage communities in ways that resonate with their lived experiences. This is particularly important in Nigeria's context because while international priority is on reducing carbon emissions, local communities in Nigeria are more concerned with adapting to the immediate impacts of climate change, such as improving agricultural resilience.

The study also underscores the importance of cultural narratives and indigenous knowledge systems in shaping perceptions of climate change. The respondent's strong preference for receiving information in local languages underscores the importance of culturally and linguistically appropriate communication, as recommended by [46]. Interview insights further emphasise the community's desire for information that is not only in their language but also culturally relevant, which is crucial for effective climate change perception and response. The influence of spiritual beliefs and cultural metaphors, such as viewing changes in the climate as "the angers of the gods", "Ntughari Igwe", and references to deities such as Amadioha, illustrates how traditional beliefs influence understanding even among the literate. This is crucial for effective climate change perception and response, as traditional beliefs and cultural metaphors significantly influence understanding, even among the literate. Sanganyado, Teta, and Masiri [47] argue that traditional worldviews significantly impact climate risk perception in regions with strong indigenous cultures. The cultural disconnect between scientific explanations and traditional understandings of environmental changes can lead to scepticism or misunderstanding, hindering engagement in climate change discussions and action.

The implication of these findings is profound. When community members cannot fully understand the language used in climate change communication, they are less likely to challenge their religious notion that climate change is a punishment from God. This is the case with respondents who linked climate change to God's anger and aligns with Abegunde [50] who found that such beliefs significantly influenced climate change response efforts in Nigerian communities. The belief that climate change is beyond human control can lead to a sense of helplessness and inaction, which is particularly concerning given the accelerating impacts of climate change. Makwanya [44] suggests transferring climate change discourses in a way that respects and incorporates cultural nuances in a positive manner.

Additionally, the study underscores the role of socio-economic variables in shaping access to climate change information, particularly in communities where indigenous languages are predominant. Many community members face barriers such as limited access to formal education or media, which impacts their ability to comprehend complex English language. This exacerbates the knowledge gap and hinders effective engagement with climate change issues. This aligns with findings by Apata [49], who notes that farmers with higher levels of education and access to information are more likely to perceive climate change accurately and adopt adaptive strategies. Conversely, those with limited educational opportunities may lack the necessary skills to interpret complex scientific data, leaving them more vulnerable to climate change impacts. The digital divide between the young and the old, as well as the rich and poor further compounds these challenges. According to Hilbert [51], disparities in digital access can lead to unequal information dissemination, where educated and wealthier individuals have greater access to online resources and climate change information. Moreover, the cost of accessing traditional media such as newspapers and television can be prohibitive for low-income households. Socioeconomic status also influences individuals' financial and time capacity to participate in community meetings, workshops, and seminars where climate change information is disseminated.

5.2. Measures to Enhance Climate Change Communication

To improve climate change communication in communities that predominantly speak local languages, several measures can be implemented. Disseminating information in local languages and incorporating culturally resonant proverbs and metaphors are fundamental in bridging the communication gap. This approach aligns with Nigeria's National Policy on Climate Change (NPCC), which emphasises the need for inclusive and participatory communication strategies that engage all stakeholders [7]. By translating complex climate concepts into local languages and incorporating culturally resonant proverbs and metaphors, communicators can foster a deeper connection to climate change issues. This strategy is supported by Hall [45], who argues that culturally compatible narratives that are context-specific can enhance local actors' engagement and foster a sense of ownership and responsibility regarding climate action.

Given the linguistic diversity in Nigeria, with over 250 native languages, it is crucial to develop climate change vocabulary that resonates with local experience and historical contexts. Wa Thiong'o [24] emphasises that languages reflect cultural experiences, and the absence of a culturally embedded term for "climate change" can lead to reduced comprehension and reliability among non-native English speakers. Integrating traditional knowledge and experience can bridge the gap between scientific concepts and everyday realities. This alignment will enhance the relevance of climate messages and foster a deeper understanding of climate change among community members. This can also help empower the communities to leverage their own expertise in developing preparedness and response strategies. Nigeria's National Adaptation Strategy and Plan of Action for Climate Change (NASPA-CCN) recognises the value of indigenous knowledge in enhancing community resilience and adaptation efforts [52].

Improving literacy, particularly regarding the environment, can enable community members to better understand the complex interactions between human activities and climate change, thereby enhancing their capacity to participate in climate change discussions and activities. Nigeria's climate governance framework supports integrating climate education into school curricula and adult education programs to build foundational knowledge and empower individuals to take proactive measures [53]. This can also be achieved by organizing community-based climate change courses and workshops to enhance environmental literacy and equip individuals with the skills needed to participate in climate change discussions and activities. This approach is supported by Leiserowitz [54] who emphasises the importance of education in shaping public perception and response to climate change.

Leveraging trusted and familiar platforms such as community meetings and workshops facilitates interactive dialogue and collective problem solving. This will enhance engagement through dialogue and deliberation, and facilitate multiway communication to ensure that diverse perspectives are considered but also build resilience. This participatory approach advocated by Webler and Tuler [35] aligns with Nigeria's climate governance strategies, which emphasise stakeholder engagement and multilevel governance [7]. Trust is the cornerstone of effective communication, and engaging trusted sources, as pointed out in an earlier study, can encourage community-wide engagement in climate change initiatives [39]. By engaging community leaders, religious figures, and trusted influential community members, we can enhance the credibility and effectiveness of climate messages, fostering community-wide engagement in climate change initiatives. These trusted figures can act as powerful advocates for climate action, motivating community participation and building resilience.

6. Conclusions

Existing communication strategies in Nigeria often fail to consider the culturally specific ways communities interpret and react to climate change, largely due to their dependence on non-localised messaging. This dissonance may undermine people's efforts to mitigate and adapt to climate risk within their communities. It is therefore important to tailor clear, relatable, and trustworthy climate change information to local contexts. By addressing language barriers and leveraging trusted community channels, the effectiveness of climate change communication can be significantly improved. Despite the issue of bias and untrustworthiness among government agencies, they remain essential in climate change communication due to their capacity to collate and distribute scientific and policy-relevant information. The challenge, therefore, lies in improving communication strategies, increasing transparency, and demonstrating efficacy in improving public trust. By prioritizing clarity, credibility, and contextual relevance, their strategy can enhance understanding, foster engagement, and empower communities to take measures in addressing climate change.

To ensure the effectiveness of these measures, it is essential to align communication strategies with Nigeria's existing climate change policies and framework. This includes collaborating with government agencies, non-governmental organisations, and community-based organisations to implement communication initiatives that are context-specific and culturally appropriate. By integrating these recommendations into Nigeria's climate governance framework, policymakers can create a supportive environment for effective climate change communication that empowers communities to engage with and respond to climate challenges. Addressing the barriers and measures identified in this study through policies will not only address current communication gaps but will also lay the groundwork for sustainable community-driven climate action that will foster meaningful engagement with local community members.

The study has several limitations that we acknowledge. Firstly, we conducted the survey using platforms that are visited exclusively by Anambra State residents. It is widely recognised as one of the most educated states in Nigeria. Consequently, the findings may not accurately reflect climate change awareness and communication effectiveness in less educated or economically disadvantaged areas of the country. Additionally, the study focused on individuals with at least an O-level education, potentially excluding perspectives from those without formal education. This educational criterion may have influenced the result, as individuals with different educational backgrounds might have varying levels of understanding and engagement with climate risk issues. The sample size and demographic focus of 142 respondents and 15 interviews may not represent the diverse communities across Nigeria, limiting the generalizability of the findings. We also acknowledge that even though we designed the survey to ensure that questions are neutrally worded, we acknowledge that some questions may inadvertently suggest a particular response. We also acknowledge that the survey length and structure would have contributed to the lower number of respondents that answered.

For future research, we recommend expanding the study to include multiple communities with different languages across different regions of Nigeria. The broader approach would provide a more comprehensive understanding of climate change communication effectiveness nationwide. It is also advisable to incorporate a more diverse participant pool, including individuals without formal education, to capture a wider range of perspectives and experiences. Such inclusivity would help identify unique challenges and opportunities in climate change communication across different socioeconomic and educational contexts. Additionally, employing a larger and more representative sample size could enhance the applicability of the research findings to the broader Nigerian population.

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