MEDIA EXPOSURE, COMPREHENSION, AND COMPLIANCE WITH CLIMATE-CHANGE MESSAGES AMONG RESIDENTS OF ENUGU METROPOLIS.

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ABSTRACT: Environmental issues have been a major worldwide problem, and Nigeria is not exempted from this problem as the country experiences flooding, erosion and other consequences of climate change. This study examines the exposure to climate change media messages and compliance with climate change media messages among residents of Enugu metropolis. The researcher adopted the survey design with a sample size of 385, which was obtained using the Australian sample size calculator. The instrument for data collection was the questionnaire. Data were analysed quantitatively using frequency, percentage, and mean and standard deviation. Findings from the study revealed that Enugu metropolis residents have high levels of exposure to climate change media messages and compliance with climate change media messages, respectively. The study recommends, among others, that a similar study should be carried out in rural areas since this study, which was conducted in an urban area with a high literacy level, looks positive with regard to exposure to climate change media messages and compliance with climate change media messages.

Keywords: Media, Enugu, Climate-change, Weather, Flood.

INTRODUCTION

Environmental concerns have been a significant global issue. According to Batta, Ashong and Bashir (2013), both national governments and the United Nations have implemented measures to raise awareness and focus on topics such as air and water pollution, deforestation, desertification, greenhouse gas emissions, global warming, and climate change, etc through conventions and summits. Many African countries are facing developmental challenges, and the most significant challenge due to increasingly difficult weather conditions is the impact on food security. According to Bwala (2023), similar experiences are encountered in Nigeria, where during July and August, the Northern region of the country faces the challenge of flooding, which has caused a significant reduction in crop production and the death of livestock in rural areas where farming and animal husbandry are primary sources of livelihood. This is further reiterated by Ani et al. (2022), who reported that the Nigerian climate is varying increasingly in terms of rainfall, and this is felt across the vegetative zone of Nigeria where the Mangrove Swamp and the Rain Forest zones witness intense flooding, which results in loss of crops.

Nigeria is not exempted from the impact of climate change as it covers a significant part of the planet's land and water area. Also, it is a large producer of hydrocarbons and gas, with a population of over 100 million who mainly work in subsistence agriculture, fishing, and herding. Nigeria Tribune Newspaper (2012) reports that the impacts of climate change in

Nigeria consist of flooding in numerous areas, erosion, erratic weather, constant desert encroachment in the north, dwindling fish populations, and loss of rare forest animals.

The Sustainable Development Goals (SDGs) focus on the environment and climate change in objectives 13, 14, and 15. The main focus of goal number 13 is to urgently combat climate change and its impacts (Oyero et al. 2018). The impact of climate change on society has been remarkable, with both highly industrialised and less industrialised societies responsible for contributing to the factors that cause climate change. According to Oyero et al. (2018), everyone at the national, regional, and community levels, is accountable for ensuring a safe environment.

Human actions since the start of the Industrial Revolution have greatly exacerbated climate change, turning it into a significant global issue that poses a real challenge for societies. The rise in greenhouse gas emissions caused by human activities has led to global warming, changes in rainfall patterns, droughts, floods, forest fires, sea level rise, and crop failures. In Enugu State of Nigeria, farmers risk suffering from climate change effects like crop failures, increased hunger, and malnutrition (Robert, 2009).

According to Umeji (2010), the Nigerian media seem indifferent to raising awareness about climate change, leaving the country vulnerable to the impacts of global climate challenges. According to his evaluation, the Nigerian media appear behind in raising awareness about climate change and often leave it to individuals. Umeji believes that most Africans lack knowledge about climate change and that it is crucial for the media to take on a leading role in raising awareness about the issue.

The level of awareness about climate change the media have raised is uncertain which invariably translates to compliance with messages on climate-change practices aimed at mitigating climate change impacts for a better environment. Therefore, this study investigates the levels of exposure, comprehension, and compliance with climate change media messages among residents of Enugu metropolis, assessing the role of media in fostering sustainable behaviours. The following objectives of this study are to:

1. Find out the residents' exposure level to climate change media messages.
2. Find out the residents' comprehension level of climate change media messages.
3. Find out the compliance level of residents with climate change media messages.
4. Find out the obstacles that prevent residents from complying with climate change media messages.

Literature Review and Theoretical Framework

Ani et al. (2022), in their study, "The impact of climate change on food and human security in Nigeria," found that climate change affected the food supply chain owing to the effect of climate change on crop production. It was also noted that climate change induced forced migration, which led to a decrease in food access or undernourishment among the victims. The study revealed that Nigeria is significantly affected by the variability in climatic conditions, and this has consequences for food production, storage and distribution. The study also revealed that the Nigerian climate is varying increasingly in terms of rainfall, and this is felt across the vegetative zone of Nigeria where the Mangrove Swamp and the Rain Forest zones witnessed intense flooding, which resulted in loss of crops and internal displacement.

According to the study, the crisis of flooding in Nigeria in recent times affects farmers who use the wet plain along the Niger and Benue Rivers where huge amounts of food crops have often been submerged and damaged by flooding.

Oyero et al. (2018), in their study, "Strategic communication for climate change awareness and behavioural change in Ado-Odo/Ota Local Government of Ogun State," found that serious knowledge of the implications of climate change was currently lacking among the study population which implied that the people's understanding of climate change was low. The study also found that compliance with climate change messages was low as practices contributing to climate change were still prevalent in Ado-Odo/Ota communities. According to the survey, most residents are still engaged in refuse burning in open spaces, while others are still involved in burning wood for cooking, using kerosene, and improperly disposing of waste.

However, the study by Oyero et al. (2018) is dissimilar to the study conducted by Balarabe and Hamza (2020) entitled, "Climate Change: Media Coverage and Perspectives of Climate Change in Kano, Nigeria," where they found that media coverage and representation of climate change positively impacted 328 respondents (82%) in Kano State, Nigeria which translates to high compliance with climate change media messages. The same study found that 333 respondents (83%) in Kano State were aware of media coverage and representation of climate change in Kano State. Furthermore, the study found that 177 (44%) respondents indicated that their predominant source of information about climate change is social media, while none (0%) stated the print medium (newspapers/magazines). This was also affirmed by Nwabueze et al. (2015), who examined "Nigerian newspapers' coverage of climate change issues," and found that from the volume of coverage of climate change issues by Nigerian newspapers, the newspapers did not give adequate coverage to climate change issues as out of 190 editions of the newspapers studied, only 15 stories on climate change were recorded.

In their study, Ndulue et al. (2021) examined the "Spatial variation in the level of awareness and application of climate change policies and laws in Enugu State, South East, Nigeria," where they found out that most of the respondents in Enugu municipal (95.42%) were aware of climate change through the news media and the social media. The use of smartphones as a source of information was followed by radio. It was also found that Enugu State had no tree-planting policy as a response to climate change.

Barkemeyer et al. (2017), in their study, "Media coverage of climate change: An international comparison," found that competing issues in a country overshadow the amount of mass media coverage dedicated to climate change, in this regard, unemployment.

This study is anchored on the agenda-setting theory developed by Maxwell McCombs and Donald Lewis Shaw in 1968 (Asemah et al. 2017). It highlights the power of the media to shape the perception of events in the public's minds. According to the theory, audience members not only acquire information about public matters from the mass media but also understand the significance of an issue based on how important the media are to it. In doing this, the mass media establish topics for public conversation. The media play a crucial role in disseminating climate change information, which influences public awareness, perceptions, and compliance. Moreover, the agenda-setting theory can help understand the media's role in highlighting the importance of climate change and framing the narrative surrounding it since media frames can shape how people perceive information, affecting their mindset and actions.

RESEARCH METHODOLOGY

The survey design was employed in this study. The population for this study is the residents of Enugu metropolis, which is 722,644 according to the 2006 National Population Census. However, we cannot use the figures to judge the city's population in 2024. In that regard, using the annual growth rate of 3.2% as established by the United Nations Development Programme (UNDP), a projection of the 2006 population was made, spanned 18 years (2006 to 2024). The formula is as follows:

$PP = GP \times P1 / 100$

$PP = P1 \times T$

$PP = P1 + GP$

Where:

PP = Projected population

GP = Given population as of the last Census

P1 = UNDP's population extrapolation index of 3.2% per annum

T = Period between the last Census and the year of study

To compute the PP:

GP = 722,664

P1 = 3.2%

T = 2006 – 2024 = 18

$PP = 722,664 \times 3.2 / 100 = 23,125$

$23,125 \times 18 = 416,250$

$416,250 + 722,664 = 1,138,914.$

As such, the projected population for 2024 is 1,138,914.

Using the Australian Sample Size Calculator, a sample size of 385 was arrived at. The study adopted the multistage sampling technique. In the first stage, the cluster sampling method was used to cluster Enugu metropolis into Local Government Areas: Enugu East, Enugu North, Enugu South. In the second stage, random sampling was used to select the communities under each local government area. Adopting the random sampling technique allowed all units in the population to have an equal chance of being selected. In choosing the communities to study, the names of the communities were written down on a piece of paper, after which the pieces of paper were folded and tossed into a large bowl. The nine (9) communities randomly picked

(three per LGA) are: Abakpa Nike, Airport Road Layout and Thinkers Corner for Enugu East; Independence Layout, Ogui Township and China Town for Enugu North; Amechi, Ugwuaji and Obeagu for Enugu South. In the third stage, Bowley's proportionate technique was adopted in order to ensure a corresponding and fair representation of the local government areas in the copies of the questionnaire distributed vis-à-vis their respective population. An accidental sampling technique was used to distribute the copies of the questionnaire to the respondents. The instrument for data collection was the questionnaire.

The ensure the validity of the questionnaire, it was given to a statistician who eventually ran the analysis. The statistician made little corrections in the questionnaire, and validated it for the research. In order to ascertain the reliability of the instrument used in this research, the researchers embarked on a pilot study in Nsukka. Copies of the questionnaire were administered to 100 residents in Nsukka. Their responses were gathered and evaluated in line with the objectives of the study to see if the questionnaire was well-tailored to give the relevant responses. The data gathered from the respondents were calculated and presented using standard deviation, mean, percentage and tables.

DATA PRESENTATION AND ANALYSIS

Demographic data were analysed using simple percentages while data regarding the objectives were analysed using mean and standard deviation. A total of 385 copies of the questionnaire were distributed, of which 360 copies were successfully returned.

Demographic Data

Table 1: Demographic Data   **n = 30**

Variables	Frequency	Percentage (%)
Gender		
Male	166	46
Female	194	54
Age		
16-21 years	100	28
22-27 years	140	39
28-33 years	78	22
34-39years	32	9
40 years and above	10	2
Educational Qualification		
FSLC/primary	13	4
SSCE/O'Level	115	32
Bachelor's Degree	166	46
Master's Degree	37	10
Doctoral Degree	29	8
Religion		
Christianity	300	83
Muslim	15	4
African Traditional Religion	45	13

The table above shows the demographic data of 360 respondents. Analysis of the demographic data shows that the survey was conducted among a population dominated by females, young adults, and individuals with Bachelor's degrees.

Table 2: Number, Mean and Standard Deviation of the exposure level of residents to climate change media messages.   **n = 360**

Level of Exposure	Mean $\bar{x}$	Standard deviation	Decision
I listen to radio programmes that discuss climate change issues.	3.52	0.95	High Level
I come across online articles or blogs discussing climate change.	2.95	1.12	Low Level
I come across newspapers or magazines featuring stories on climate change.	3.28	0.98	High Level
I watch television programmes on climate-change-related topics/issues.	3.12	1.06	High Level
I engage with climate-change-related content on social media platforms.	3.08	1.01	High Level
I receive climate change information from multiple media sources.	3.45	0.97	High Level
Grand Mean: 3.23			

Table 2 shows the level of exposure of Enugu metropolis residents to climate change media messages. It reveals that Enugu metropolis residents exhibit high exposure to climate change media messages through radio programmes, followed by newspapers or magazines (print). However, their exposure to online articles or blogs discussing climate change is comparatively lower. Findings here reveal that residents of Enugu metropolis have a high level of exposure to climate change media messages, as shown in the grand mean.

Table 3: Number, Mean and Standard Deviation of the comprehension level of residents to climate change media messages.   **n = 360**

Comprehension Level	Mean $\bar{x}$	Standard deviation	Decision
I understand the main concepts and terminologies used in climate change discussions.	3.82	0.96	VHL
I can accurately explain the causes and consequences of climate change.	3.64	1.02	VHL
I feel confident in my ability to interpret climate change data presented in the media.	3.48	0.94	High Level
I seek additional resources to clarify any uncertainties I have about climate change.	3.78	0.88	VHL
Grand Mean: 3.68			

Table 3 shows that Enugu metropolis residents demonstrate a high level of comprehension to climate change media messages. To a very high level (VHL), they understand the main concepts and terminologies used in climate change discussions, can accurately explain the

causes and consequences of climate change, and seek additional resources to clarify any uncertainties they have about climate change. Findings here, as summarised in the grand mean, show that residents of Enugu metropolis have a very high level (VHL) of comprehension of climate change media messages. This could be a result of the educated population in this study, as the majority had higher education.

Table 4: Number, Mean and Standard Deviation of the compliance level of residents with climate change media messages. n=360

Compliance Level	Mean $\bar{x}$	Standard deviation	Decision
I consistently implement practices to reduce my carbon footprint.	3.75	0.88	Agree
I make environmentally friendly choices in my daily activities, guided by media messages.	3.68	0.91	Agree
I have changed my consumption habits (e.g., reducing plastic use and conserving water) due to climate change media messages.	3.65	0.93	Agree
Due to climate change media messages, I have switched to using renewable energy sources (e.g., solar power).	3.71	0.90	Agree
Grand Mean: 3.69			

Table 4 shows the compliance level of residents of Enugu metropolis with climate change media messages. Analysis reveals that residents of Enugu demonstrate a very high level of compliance with climate change media messages, as seen in the grand mean. Again, this could be attributed to the sampled population's higher education level. The findings imply a readiness to adopt sustainable practices and support policies to address climate change challenges within the environment.

Table 5: Number, Mean and Standard Deviation of the obstacles preventing residents from complying with climate change media messages. n = 360

Obstacles	Mean $\bar{x}$	Standard deviation	Decision
I find it challenging to understand how my individual actions impact climate change.	3.52	0.98	Agree
Economic/financial constraints make it difficult for me to adopt more sustainable lifestyle choices (e.g., renewable energy sources)	3.85	0.75	Agree
Cultural or societal norms in my environment discourage environmentally friendly behaviours.	4.10	0.62	Strongly Agree
Limited access to reliable information about climate change hinders my ability to take action.	2.85	1.05	Disagree
I feel that my efforts to address climate change won't make a significant difference.	3.68	0.84	Agree
The lack of governmental or institutional support makes it difficult to take action on climate change.	3.95	0.71	Agree

Findings in Table 5 show that economic/financial constraints to adopt more sustainable lifestyle choices, and lack of governmental or institutional support are significant obstacles preventing Enugu metropolis residents from complying with climate change media messages.

DISCUSSION OF FINDINGS

Objective One: To determine the residents' exposure level to climate change media messages.

Findings from this objective reveal that Enugu metropolis residents exhibit a high level of exposure to climate change media messages through radio programmes, followed by newspapers or magazines (print). However, their exposure to online articles or blogs discussing climate change is comparatively lower. This finding is in line with the finding of Ndulue et al. (2021), who found that most of the respondents in Enugu municipal (95.42%) were aware of climate change through the news media but dissimilar to the same finding where social media played a role in the awareness of climate change.

The finding from this objective, where exposure to climate change media messages through online articles/blogs is lower and exposure through newspapers is high, is in contrast with the finding from Balarabe and Hamza (2020), where 177 (44%) respondents indicated that their predominant source of information about climate change is social media while none (0%) stated the print medium (newspapers/magazines). In as much as this finding from Balarabe and Hamza (2020) supports that of Nwabueze et al. (2015), who found that newspapers did not give adequate coverage to climate change issues as out of 190 editions of the newspapers studied, only 15 stories on climate change were recorded, it does not align with the findings of this objective where newspapers were a predominant source of information about climate change to the residents of Enugu metropolis.

Findings from this objective corroborate the agenda-setting theory, which states that audience members not only acquire information about public matters from the mass media but also understand the significance of an issue based on how important the media are to it. The radio and print media highlighted the importance of climate change messages, which invariably gave residents of Enugu metropolis a high level of exposure.

Objective Two: To determine residents' comprehension level of climate change media messages.

Findings from this objective show that Enugu metropolis residents demonstrate a high level of comprehension of climate change media messages. To a very high level (VHL), they understand the main concepts and terminologies used in climate change discussions, can accurately explain the causes and consequences of climate change, and seek additional resources to clarify any uncertainties they have about climate change. This could result from the educated population in this study, as the majority had higher education. The finding here is unlike that of Oyero et al. (2018), who found that profound knowledge of the implications of climate change was currently lacking among the study population, implying that the people's knowledge of climate change was low which could be attributed to poor understanding of climate change.

Objective Three: To determine residents' compliance level with climate change media messages.

Findings from this objective reveal that residents of Enugu demonstrate a very high level of compliance with climate change media messages. Again, this could be attributed to the sampled population's higher education level. The implication of the findings to this objective is a readiness to adopt sustainable practices and support policies to address climate change challenges within the environment. This finding affirms the finding of Balarabe and Hamza (2020), who found that media-coverage and representation of climate change positively impacted 328 respondents (82%) in Kano State, Nigeria, which translates to high compliance with climate change media messages. However, the findings above are dissimilar to those of Oyero et al. (2018), who found that compliance with climate change messages was low as practices contributing to climate change were still prevalent in Ado-Odo/Ota communities. According to the study, most residents are still engaged in refuse burning in open spaces, while others are still involved in burning wood for cooking, using kerosene, and improperly disposing of waste.

The findings from this objective further supports the agenda-setting theory where the media play a crucial role in disseminating climate change information, which influences public awareness, perceptions, and compliance. The power of the media to shape the perception of events in the public's minds gave significance to climate change, which resulted in high compliance with climate change media messages.

Objective Four: To find out the obstacles preventing residents from complying with climate change media messages.

Findings from this objective show that economic/financial constraints to adopt more sustainable lifestyle choices, and lack of governmental or institutional support are significant obstacles preventing Enugu metropolis residents from complying with climate change media messages. This finding aligns with that of Ndulue et al. (2021), who found that lack of governmental support is a significant obstacle preventing Enugu residents from complying with climate change media messages as there was no policy in Enugu State on tree planting as a response to climate change.

Conclusion

Based on the results, the study concludes that there are significantly high, very high and very high levels of exposure to climate change media messages, comprehension of climate change media messages, and compliance with climate change media messages, respectively, by residents of Enugu metropolis. The implication of this is that the radio remains a veritable medium in disseminating messages of national importance. Also, the very high levels of comprehension and compliance could be a result of the higher education the majority of the population had. Out of a sample size of 360, 166 had bachelor's degrees, 37 had master's degrees, and 29 had doctoral degrees. However, the economic/financial constraints to adopt more sustainable lifestyle choices like using renewable energy sources (e.g., solar) by the residents, and lack of governmental or institutional support are significant obstacles preventing residents of Enugu metropolis from complying with climate change media messages. If the residents could have a very high level of compliance with climate change media messages in the face of lack of governmental support, this implies that if the government (State and/or

Federal) makes concerted efforts in supporting positive climate change practices, most urban areas, Enugu inclusive, will have flawless positive climate change practices.

The study recommends that a similar study should be carried out in rural areas since this study, which was conducted in an urban area with a high literacy level, looks positive with regard to exposure to climate change media messages, and compliance with climate change media messages. Furthermore, the study recommends that the government and NGOs support residents in adopting sustainable practices like renewable energy use, and waste reduction. This includes subsidies for solar panels, energy-efficient appliances, and community-based conservation projects. Also, the study recommends that the radio should be embraced in disseminating climate change messages.

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