

Article

Climate Change Preparedness: A Knowledge and Attitudes Study in Southern Nigeria

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Abstract: Global climate change is projected to adversely impact freshwater resources, and in many settings these impacts are already apparent. In Nigeria, these impacts can be especially severe because of limited adaptive capacity. Understanding the knowledge and attitudes of current and future Nigerian decision-makers is important to preparing Nigeria for climate change impacts. This paper examines the knowledge and attitudes of university students and government officials about the causes, effects, and priority given to climate change in Nigeria. Paper surveys were distributed to 379 study participants in Akwa Ibom and Lagos states of Nigeria. The findings reveal that approximately 90% of study participants believe that human activities are a significant cause of climate change, with no significant difference between ministry officials' and students' responses. Participants were less knowledgeable about the effects of climate change on Nigeria as a whole, but more aware of impacts relevant to Southern Nigeria, where study sites were located. Personal experience seemed to play a role in the knowledge and attitudes of respondents. Due to the varied climate of the country, campaigns to ensure comprehensive knowledge of climate change impacts to the entire country may be helpful.

Keywords: preparedness; policies; Uyo

1. Introduction

Warming of the Earth's climate is leading to changes in precipitation patterns, alteration of seasonal river flow patterns, and sea level rise, all of which impact the quantity and quality of water resources [1]. These impacts will particularly be felt in developing countries in Africa due to their limited access to adequate information, technology, institutions, and financial resources, that is, their limited "adaptive capacity". Nigeria is in the low human development category based on the human development index (HDI) ranking with a score of 0.504 and a rank of 152 of the 187 countries analyzed [2]. The country ranks 159 out of 230 countries based on gross domestic product on a purchasing power parity basis and an adult literacy rate of 51.1% [3,4]. The indicators sometimes reflect economic and human capacity of a country to carry out relevant national practices. By 2020, between 75 and 250 million people in Africa are projected to be exposed to greater water quantity challenges due to the combined effects of climate change, population growth, and urbanization [5,6]. Decision makers should, thus, be knowledgeable about climate change to ensure implementation of appropriate policies and programs that minimize the adverse effects and maximize the beneficial impacts of climate change. Although knowledge does not always translate to action, Stehr and Grundmann [7] note that knowledge "should be understood as the first step towards action."

According to Building Nigeria's Response to Climate Change (BNRCC) [8], there was late onset and early ending of the rainy season in most parts of the country between 1971 and 2000. However, increase in precipitation intensity has been observed in some areas. Over the past forty years, there has been a 20% increase in the volume of torrential rains across various southern states, some of which average 160 inches of rainfall a year [9]. In Nigeria, the rainy seasons are expected to get wetter but the increase may not be substantial enough to increase water availability, as increasing temperatures will cause greater rates of evaporation [10]. Additionally, the projected population growth rate in Nigeria to 2050, 5.2%, is more than double that of the world average (1.9%) creating greater demand for water [11]. It should be noted that projected changes in seasonal rainfall due to climate change are highly uncertain [12]. Additionally, increased rainfall intensity generates greater run-off, limiting the amount available for use. Projected increases do not guarantee more water availability in the future. In some parts of the country, the projected increase in precipitation may be accompanied by an increase in rainfall intensity; however, the decrease in rainfall projected during the dry seasons could lead to droughts [10]. The country's coastline is also susceptible to sea level rise [8]. Water shortage in the face of climate change is a major concern because potable water is already at a premium across much of Nigeria, although mainly as a result of poor management, supply failures, and poor water use and conservation practices [9,13]. Climate change could exacerbate the already dire situation [8].

The potential reduction in the quantity and quality of water resources in Nigeria due to the effects of climate change makes it essential for the country to adapt. Adaptation is the adjustment of systems to actual or expected climate and its effects and seeks to minimize the adverse effects and exploit the beneficial opportunities of climate change [1]. Additionally, Nigeria currently has to contend with

other environmental issues, including desertification, pollution, and rapid urbanization that impact water quality and quantity [14]. It is crucial that current and future decision makers in Nigeria are knowledgeable about climate change and its effects on the country to achieve effective adaptation and mitigation. The objectives of this study were to (1) assess the *knowledge* of current ministry officials (proxy for current decision makers) and university students (proxy for future decision makers) about the causes and impacts of climate change in Nigeria; (2) assess the *attitudes* of students and ministry officials to the importance of climate change relative to other environmental threats; and (3) compare *knowledge and attitudes* between students and ministry officials. The study was carried out in Lagos and Akwa Ibom states located in Southern Nigeria because these states are economically important and the similar climates allow for comparison between study populations. A knowledge, attitudes and practices (KAP) survey was administered to participants; the knowledge and attitudes portion was analyzed to achieve the goals of the study. KAP surveys gather information on what respondents know, think, and do and are useful in determining knowledge gaps and behaviours. Findings from such surveys can help in planning effective advocacy, communication, and social mobilization (ACSM) programs [15].

2. Methods

The study was carried out in Lagos mainland and Uyo, cities in Lagos and Akwa Ibom states, respectively. Lagos and Akwa Ibom are coastal states with tropical climates. Although Lagos is the smallest state geographically, its population of approximately 17 million makes it the most populous in Nigeria [16]. Lagos is also the economic hub of the country, accounting for over 60% of the industrial and commercial activities in the nation [17]. Lagos has over 2000 manufacturing facilities and over 200 financial institutions, including the Nigeria Stock Exchange and the nation's monetary authority, the Central Bank of Nigeria [17]. A majority of the 4 million residents of Akwa Ibom is engaged in subsistence farming and there are large deposits of oil and gas both on- and off-shore, making the state important economically and with respect to climate change policy [18]. Both states were chosen because of their economic significance and vulnerability to climate change hazards. Although specific climate change information is lacking at the state scale for these locations, they are both located on the coast and vulnerable to sea level rise and increased flooding, erosion, and salinization [10]. Akwa Ibom is in the Niger-Delta region of the country, an area that is projected to be 35% submerged with a sea level rise of 0.5 m [10].

The study populations—ministry officials and university students—were chosen based on their likely influence on current and future climate adaptation activities in Nigeria. Employees of state ministries and water agencies were selected as proxy representatives of the population for decision makers. However, without knowledge of the internal politics of these organizations, there was no way to ensure that survey respondents have substantial influence on actual state-level decision making. University students were selected as proxy representatives of the population for future decision makers. Ministries that were surveyed included Lagos and Akwa Ibom states Ministries of Environment, Education, and Rural Development (in charge of water supply in rural areas), Lagos Water Corporation (in charge of water supply in urban areas in Lagos), and the Akwa Ibom Water Company (in charge of water supply in urban areas in Akwa Ibom). Officials from the climate change

divisions of the ministries or, when a climate change division did not exist, the science and technology division were the focus of the study. The two largest universities, by student population, in both states were surveyed: University of Lagos in Lagos state and University of Uyo in Akwa Ibom state. Departments in the universities surveyed included engineering, environmental science, and law. These departments were selected because of their direct involvement in environmental issues and/or policies that guide environmental decisions. Additionally, students from these departments were selected based on the assumption that officials working in climate change divisions of the Ministries of Environment, Rural Development, and the urban water corporations and in the science and technology division of the Ministry of Education have a background in environmental sciences, engineering, and regulatory practices.

The same questions on knowledge and attitudes were asked of both decision makers and university students (Questions analyzed in the paper are shown in Table 1; full survey in the supplementary section). For this study, the KAP survey gathered information on basic knowledge of climate change effects on Nigeria, attitudes regarding climate change, and knowledge of awareness practices carried out to improve knowledge and attitudes. The questions analyzed in this study are presented in the results section.

Table 1. Questions posed to study participants and analyzed in this paper.

Question	Possible Responses
Human activity is responsible for climate change:	Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree
Natural variability is responsible for climate change:	Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree
To what extent are human activity and natural climate variability responsible for climate change?	Solely human activities, Mainly human activities, Both equally responsible, Mainly natural variability, Solely natural variability
Which of the following will affect Nigeria as a consequence of climate change?	Sea level rise, Drought, Flooding, Coastal erosion, Rising temperatures, Melting glaciers, Desertification, Increasing intensity and frequency of extreme weather events, Other, I don't Know, No effects
What are the top three environmental issues facing Nigeria?	Overpopulation, Urbanization, Deforestation, Desertification, Climate Change, Pollution, Recycling, Environmental Education, Renewable energy, Other

Approximately 15 questionnaires were distributed in each ministry. Individuals in departments within each ministry responsible for climate change and education were read a “consent to participate” write-up and, if they consented, given a questionnaire to complete. For the universities, the investigators went class to class and distributed questionnaires in classes that had students present. Participants were approached within the buildings that housed the relevant divisions and departments for the ministries and universities, respectively, and asked to participate. Selection of participants was based on availability to complete the survey. Before being asked to participate, students were asked if they were students of one of the three departments being surveyed in this study. Approximately 50 questionnaires were distributed to students in each department.

The data were analyzed using the R Statistical Package. The Chi-square statistic was used to analyze the Likert scale responses. This statistic is used to investigate the presence of differences in the distributions of categorical data and is non-parametric, that is, does not assume a distribution. Two main assumptions hold for the use of this statistic. One is that groups analyzed are independent, that is, no study participant fits into both groups and there is one response per participant as was the

case for the study. The other assumption is that no more than 20% of the possible responses were chosen by less than five respondents and all individual Likert responses are chosen by at least one respondent [19]. The Likert scale responses were analyzed by grouping the “agreement” responses and the “disagreement” responses and as a result the second assumption held. The Fisher’s exact test, a statistical test used to determine if there are non-random associations between two categorical variables, was used to analyze yes/no responses as well as questions in which respondents could select multiple choices. This test works well for small sample sizes and for analyses carried out with 2 choices and 2 groups and so was used instead of the Chi-square test for the aforementioned questions [20]. All tests were conducted at a significance level of 95%.

3. Results

3.1. Respondent Demographics

A total of 380 individuals took part in this study as shown in Table 2.

3.2. Knowledge of Climate Change

3.2.1. Causes of Climate Change

Most university students (89.2%) and ministry officials (92.9%) “strongly agree” or “somewhat agree” that human activity is responsible for climate change (Table 3). Most respondents (70.9% students and 77.4% ministry officials) agree to some extent that natural climate variability is also responsible for climate change (Table 4); although, agreement on this was not as strong as for human activity. There were no significant differences— $p = 0.2858$ and $p = 0.2919$ —in the distribution of the responses between the two study populations for the question on human activity and natural variability, respectively, being responsible for climate change.

Table 2. Respondent demographics.

Respondent Description	Ministry Officials		Students	
	Akwa Ibom	Lagos	Akwa Ibom	Lagos
Total number of respondents	35	50	144	151
Female/Male/No answer	12/22/1	22/28/0	43/100/1	57/92/2
Undergraduate/Graduate/No answer	N/A	N/A	118/24/2	123/28
Faculty/Department:				
Engineering			52	53
Environmental studies	N/A	N/A	46	48
Law			46	50
Organization/Ministry:				
Ministry of Environment	11	18		
Ministry of Rural Development	7	12		
Ministry of Education	10	9	N/A	N/A
Water Corporation/Company	7	11		

Table 2. Cont.

Respondent Description	Ministry Officials		Students	
	Akwa Ibom	Lagos	Akwa Ibom	Lagos
Years in the Ministry				
0–5 years	14	14		
6–10 years	6	10		
11–15 years	5	5		
>15 years	9	19		
No answer	1	2		

Table 3. Response to “human activity is responsible for climate change”.

Survey Question Choices	Students		Decision-Makers	
	N	%	N	%
Strongly agree	194	65.8	64	76.2
Somewhat agree	69	23.4	14	16.7
Don’t know	9	3.1	1	1.2
Somewhat disagree	5	1.7	0	0
Strongly disagree	13	4.4	3	3.6
No response	5	1.7	2	2.4

No significant difference in the responses of students and ministry officials (p -value = 0.2858).

More people responded that human activity rather than natural climate variability is responsible for climate change. Despite this, the most common response of survey participants (34.2% students and 45.2% ministry officials) regarding the extent to which both were responsible was that both human activity and natural variability were equally responsible (Table 5). There was an inconsistency of answers with two-thirds of respondents having different levels of agreements for the two causes of climate change but stating that both causes were equally responsible (e.g., a participant “strongly agreed” human activity was responsible and “somewhat agreed” natural variability was responsible but responded that “both were equally responsible”).

Table 4. Response to “natural climate variability is responsible for climate change”.

Survey Question Choices	Students		Decision-Makers	
	N	%	N	%
Strongly agree	86	29.2	30	35.7
Somewhat agree	123	41.7	35	41.7
Don’t know	31	10.5	3	3.6
Somewhat disagree	20	6.8	7	8.3
Strongly disagree	21	7.1	8	9.5
No response	14	4.7	1	1.2

No significant difference in the responses of students and ministry officials (p -value = 0.2919).

3.2.2. Effects of Climate Change in Nigeria

Respondents were asked “Which of the following will affect Nigeria as a consequence of climate change?” and were given eight choices, all of which could be selected if respondents deemed them to be climate change consequences to the country. Of the eight options, the three most commonly selected for both study populations were rising temperatures (77.3% students and 77.4% ministry officials), flooding (59.0% students and 73.8% ministry officials), and sea level rise (48.5% students and 71.4% ministry officials) (Table 6). Melting glaciers was the least selected option for both study populations. Ministry officials were significantly more likely to select five of the eight choices and there was no significant difference in responses for the remaining three.

Table 5. Responses for “to what extent are human activity and natural climate variability responsible for climate change”.

Survey Question Choices	Students		Decision-Makers	
	N	%	N	%
Solely human activity	10	3.4	8	9.5
Mainly human activity	83	28.1	20	23.8
Both equally	101	34.2	38	45.2
Mainly natural variability	21	7.1	3	3.6
Solely natural variability	4	1.4	1	1.2
No response	74	25.1	14	16.7

No significant difference in the responses of students and ministry officials (*p*-value = 0.103).

Table 6. Response to “which of the following will affect Nigeria as a consequence of climate change”.

Survey Question Choices	Students		Decision-Makers		<i>p</i> -Value *
	N	%	N	%	
Sea level rise	143	48.5	60	71.4	0.0003
Drought	102	34.6	45	53.6	0.0022
Flooding	174	59.0	62	73.8	0.0144
Coastal erosion	114	38.6	51	60.7	0.0004
Rising temperatures	228	77.3	65	77.4	1.0000
Melting glaciers	26	8.8	10	11.9	0.4027
Desertification	125	42.4	48	57.1	0.0243
Increasing frequency and intensity of extreme weather events	146	49.5	48	57.1	0.2626
I don’t know	8	2.7	0	0	0.2076
None	2	0.7	0	0	1.0000

* Bolded values are significant at the 0.05 level.

3.3. Attitudes Regarding Climate Change

Perception of Top Environmental Issues in Nigeria

Participants were asked to select the top three environmental priorities for Nigeria out of nine possible choices with an option to write their own responses for environmental issues they prioritized over the choices given. Student respondents most often chose pollution (56.3%) and overpopulation (37.6%), with climate change being the third most selected response (35.9%). In contrast, ministry officials most frequently chose climate change (60.7%) as the top environmental priority of the country, followed by environmental education (45.2%) and pollution (44.0%) (Table 7). There was a significant difference between students and ministry officials for deforestation, climate change, pollution, and recycling.

Table 7. Response to “top three environmental issues in Nigeria”.

Survey Question Choices	Universities		Ministries		<i>p</i> -Value
	N	%	N	%	
Overpopulation	111	37.6	30	35.7	0.7990
Urbanization	67	22.7	20	23.8	0.8840
Deforestation	74	25.0	32	38.1	0.0280
Desertification	22	7.5	8	9.5	0.6487
Climate change	106	35.9	51	60.7	0.0001
Pollution	166	56.3	37	44.0	0.0480
Recycling	71	24.1	10	11.9	0.0157
Environmental education	96	32.5	38	45.2	0.0528
Renewable energy	90	30.5	19	2.3	0.1735
Other	1	0.3	0	0	
No response	27	9.2	1	1.2	

Significant difference in the responses of students and ministry officials (*p*-value = 0.0033).

3.4. Secondary Analysis

The responses of students from the University of Lagos were compared to students from University of Uyo. The same analysis was carried out for ministry officials for the different states. This analysis aids in determining if there are significant differences in responses within the two main study populations—students and ministry officials—as a result of their location. Table 8 below shows that there are no significant differences in responses within the two main study populations. From this analysis, the level of knowledge and the attitudes are similar for students regardless of state in which they were surveyed. The same is true for ministry officials.

Table 8. *p*-values for the comparison of responses of ministry officials and students in Lagos and Akwa Ibom.

Question	<i>p</i> -Values for Ministry Officials	<i>p</i> -Values for Students
Human activity is responsible for climate change	0.1040	0.7539
Natural variability is responsible for climate change	0.7779	0.2995
to what extent are human activity and natural climate variability responsible for climate change	0.1806	0.5445
which of the following will affect Nigeria as a consequence of climate change	0.2438	0.1341
top three environmental issues in Nigeria	0.4289	0.1691

4. Discussion

The study population showed high agreement (approximately 90%) in the perception that human activities play a role in causing climate change. According to Bord *et al.* [21], knowing what causes climate change, and what does not, is the greatest predictor of both stated intents to take voluntary actions and to vote to enact new government policies regarding climate change. However, this conclusion is specific to individual action and intentions rather than societal actions that bring change. Studies have shown that despite increasing scientific knowledge on climate change, actions are slow to occur, particularly at the political level [7,22]. Stehr and Grundmann [7] note that knowledge is, however, the first step to taking action. Study participants were located in Southern Nigeria, where gas flaring, one of the major environmental pollution issues in the country, occurs. Nigeria has the second highest gas flaring level in the world, and this accounts for approximately 30% of CO₂ emissions in the country [10,23]. There has been significant literature on the relationship between gas flaring and climate change [24–27] and NGOs have been active in raising awareness about gas flaring and its linkages with climate change [25]. This may contribute to the perception that human activities cause climate change. Although aware that human activities play a role in causing climate change, respondents were less confident about the relative significance of human activities when compared to natural climate variability. One reason for this may be that although human activities have become the dominant force and are responsible for most of the warming observed over the past 50 years [28], the science on the influence of human activities on changes in precipitation amount and intensity, along with other climate factors are less certain. According to the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) [28], it is *extremely likely* (95%–100% probability) human activities have been the dominant force in warming observed since the mid-20th century but it is *likely* (66%–100% probability) that human influences have affected the global water cycle. Although there is no quantified confidence level for precipitation changes, there is medium confidence, on a scale of very low to very high, that human activities have influenced the intensification of heavy precipitation over some regions [28]. Effective mitigation planning and implementation may arise from understanding the causes of climate change. As climate science improves, dissemination of data will be important to ensure that knowledge grows among different stakeholders.

Of the eight climate change effects presented to the survey participants, Nigeria is currently exposed to and/or will be directly exposed to all excluding melting glaciers as a result of climate change

according to *Nigeria's First National Communication under the United Nations Framework Convention on Climate Change* [10]. Excluding melting glaciers, drought was the least selected option of both study populations. The likely reason for this is both study sites are not only located in the humid and wet south, but are also coastal states that experience annual average rainfall between 2000 mm and 3000 mm [18,29]. According to Lorenzoni *et al.* [30], individuals characterize climate change in relation to their everyday experiences. Lowe *et al.* [31] also note that perceptions of climate change are linked to people's own direct experiences. This relation to personal experiences may be inferred here because drought and desertification—two of the three least selected options for both groups—are effects of climate change to which Nigeria is particularly prone. However, these are more likely to be felt in the arid Northern region of the country than in the south. Ministry officials were more aware of most of the effects of climate change on the country at large than students; over 50% of ministry officials selected each of the effects, excluding melting glaciers, and only one of the effects was selected by more than 50% of the students. This shows lower level of knowledge about effects of climate change among students in comparison to ministry officials.

Generally, respondents were more knowledgeable about the causes of climate change than about its effects. Sundblad *et al.* [32] carried out a study about climate change knowledge among experts, journalists, politicians, and laypersons in Sweden and reported that knowledge of climate change causes was also greater than that of future consequences in all groups. This difference in knowledge may occur as a result of the uncertainties inherent in projections of climate hazards in a region. For example, the IPCC states with *high confidence* that warming over land regions in Africa are consistent with human caused climate change but with *medium confidence* that mean annual temperature rise over Africa is *likely* to exceed 2 °C [1]. These projections are made based on different possible future scenarios and as a result are inherently inexact.

It is estimated that annually, Nigeria loses \$5.1 billion due to environmental degradation [33]. Nigeria currently has to contend with various environmental issues, including desertification, deforestation, pollution, and rapid urbanization [14], and each of these is relevant to the livelihood of country's citizens and economy of the country. For example, between 1983 and 1993, Nigeria lost approximately 20% of its forest and woodland area [14]. The fact that Nigeria has numerous environmental problems can be seen in the responses to the question about environmental priorities in the country. Apart from the top chosen responses for both populations (pollution for students and climate change for ministry officials) and the least frequently chosen (desertification), all other responses were selected by roughly the same percentage of people (Table 7). Climate change ranked in the top three environmental issues that should be prioritized in the country by both study populations. However, it is possible that since the survey was climate change focused, respondents may have assumed the investigators expected and preferred climate change as a response and as a result courtesy bias was introduced. Courtesy bias minimizes the likelihood of obtaining reliable information and as a result could distort the analysis of attitudes regarding climate change [34]. Desertification was the least frequently selected environmental issue. Again, this may be attributed to the study sites being in Southern Nigeria, an area currently not prone to desertification. Personal experiences may be an influence because according to the Federal Republic of Nigeria [35], desertification is affecting 10 northern Nigerian states and accounts for 73% of all GDP losses due to environmental degradation. Yet, it was the lowest priority of both students and ministry officials.

4.1. Limitations of the Study

Although ministry officials who were surveyed worked in the climate change or science and technology divisions of their specific ministries, the study could have benefited from additional participant information, such as information on ministry official titles and responsibilities to determine the decision making powers of the officials. Due to this limitation, the responses from officials serve as proxies for actual decision makers. Additionally, information on the universities and departments that the ministry officials attended was not collected during the survey. This information could help determine whether these ministries tend to hire from university departments surveyed and validate between groups comparisons.

In the consent script, participants were told that the study aimed to assess their perception of climate change as it relates to Nigeria. This could have biased participant responses as participants may have felt compelled to select desirable options, when possible. It is important to note that climate change was not the top priority selected by either participant group, however, this does not mean absence of bias.

4.2. Future Research

In terms of future studies, a similar study in the northern region of the country would provide a view of the knowledge of people in climate-diverse parts of the nation. Such a study would yield conclusions based on the diversity of climate zones, and therefore perceptions in Nigeria about the role of experiences in shaping knowledge of the impacts of climate change. Future research could also examine the educational background and work experiences of decision makers to determine if and how education and work experiences shape decisions made about climate specific practices. The effects of climate change awareness campaigns on university students, government decision-makers, and other relevant stakeholders could be examined as well as identifying such stakeholders that could influence climate change policy and action in Nigeria.

5. Conclusions

As the first known study carried out in Nigeria to determine knowledge of both ministry officials and university students in the country, the results provide insight on how knowledgeable ministry officials and university students are with regard to climate change causes and effects in Nigeria. Since findings explore the knowledge and attitudes of students, proxies for future decision makers, the findings may give an insight into future actions.

Additionally, ministry officials were more knowledgeable of climate change effects than university students, suggesting that ministry officials may have more access to climate change information than university students. The country may benefit from educational campaigns and/or awareness activities tailored to future decision makers of the country. These campaigns may be carried out at schools or climate change activities may be included in the curriculum if it is currently absent. Activities outside the formal educational system such as workshops on climate change may also be beneficial, as some officials may not have had formal teaching on climate change as part of their university education. This suggests that non-formal education on climate change may have played a role in their current level of knowledge. These activities can help improve knowledge of different impacts climate change

may have on the country, the role climate change plays in the society, and causes of climate change as science on these topics are improved. Although knowledge does not always translate to action, it is the first step towards taking action [7], and the effective climate change actions will require the right kind of knowledge.

Results suggest that personal experiences of those in Southern Nigeria may drive their perceptions of the likely impacts of climate change, a conclusion drawn in other studies set in different countries [30,31]. In Nigeria, the south is characterized by tropical rainforest climate while the North is characterized by the Sahel climate. This varied climate characteristics makes it important that there is an understanding of climate change effects in the country as a whole. Based on the responses from this study, we recommend awareness campaigns tailored to university students to provide comprehensive knowledge about climate change effects in Nigeria.

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Author Contributions

Edema Ojomo carried out the study, contributed to study design and data analysis, and drafted the manuscript. Mark Elliott contributed to the study design and data analysis portion as well as manuscript revisions. Urooj Amjad assisted in data analysis and manuscript revisions. Jamie Bartram supervised the study and edited the manuscript. All authors read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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