

Assessment of the Perception and Awareness of Climate Change and the Influence of Information Amongst Tertiary Education Students in North-East Nigeria

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Abstract

Climate change is one of the greatest environmental problems confronting the 21st century. It has impacted several systems of the economy in areas such as food availability and supply, access to basic education, natural energy, healthcare, environment, security and many other socio-economic and political arms of governance. Accurate information and awareness especially among the youths are critical to mitigating the impact of climate change. This paper assesses the perception of climate change amongst students studying in higher institutions of learning in Northern Nigeria. It further investigates the available and accessible medium of information relating to climate change in universities, polytechnics and colleges of education. The results were analysed descriptively and showed that most of the students are aware of the changes in weather patterns, with flood and heat waves contributing the most changes affecting the environment at 20.5% and 46.6% respectively. In addition, the results showed that although information relating to climate change is readily available, it is however not easily accessible due to the cost of the internet bundle (39.75%) and the cost of journal and textbook subscriptions (26.25%). Therefore, information must be made accessible especially in tertiary institutions to raise an informed set of graduates who will tackle societal issues proactively and sustainably.

Keywords: *Climate Change; Climate change awareness; climate change perception; climate change information sources; students.*

Introduction

Climate change is increasingly posing tremendous threat to human health and existence. Several studies have attributed the recent unprecedented impacts of climate change to anthropogenic causes (Andric et al., 2019; Dedinec et al., 2015; IPCC, 2001, 2014; Lata & Nunn, 2012;

Masood, 1995), through greenhouse gas (GHG) emissions which trap heat and warm the atmosphere (IPCC, 2014, 2018). For instance, the Intergovernmental Panel on Climate Change (IPCC) reports indicated that most of the observed extreme events over the past 50 years are likely to have been solely due to the increasing concentrations of GHG produced by human

activities such as deforestation, bush burning, fossil fuel burning and the release of several other GHGs through industrialisation and urbanisation (Parry, et al., 2007; IPCC 2012). Although the impacts of climate change are felt globally and disproportionately, there have been several arguments of ignorance and the lack of knowledge concerning its existence and realities. The rural populace of developing countries are likely to have experienced the impacts of climate change but do not know the cause or the actions to undertake. For example, local farmers are likely to have experienced variation in precipitation, but might not know why the variations are persistent especially with devastating impacts such as drought and flood (Haider, 2019).

The lack of knowledge regarding the cause of climate change amongst rural or local people in developing countries is likely to extend to students who travel from rural regions to attend higher education in universities, polytechnics and colleges of education. However, the question remains; are these higher institutions of learning capable of availing and transferring information about climate change to students with no prior knowledge about the causes of climate change? Is this information on climate change readily available and accessible to these students? These are vital questions because an informed and knowledgeable society is most likely to adapt and mitigate the impacts of climate change. This is true because differences in perception have important implications for actions undertaken, and those who are knowledgeable and accept human-

induced climate change as a reality are significantly more likely to engage in mitigation measures (Harmer & Rahman, 2014). Although the extent to which students are aware of climate change and the link between perception and action can be debated, there is still a likelihood that students from rural areas who are informed about the causes of climate change can influence their communities on mitigation and adaptation measures.

Nigeria, as a developing country is also susceptible to the unprecedented impacts of climate change due to its dependency on natural resources for food, drugs and other raw materials (Nzeadibe, 2011). When these resources are affected, people and their communities become severely impacted (Akpomi & Vipene, 2016). Often their sources of livelihoods are taken away from them and rural communities become vulnerable. For example, seasonal alterations of rainfall and temperature can likely lead to flood or drought, the spread of diseases, conflicts due to competition over scarce resources and these impacts can force communities to abandon their places of residence and livelihood. In addition, with a fast-growing uninformed population and unprecedented climate impacts, it is most likely that a lot of people will be exposed, thereby increasing the number of vulnerable people globally (IPCC, 2018). Reducing vulnerability to climate change and building resilience and adaptation can only be feasible when the populace is informed especially about the causes, and consequences of certain actions that contribute to climate change. Northern Nigerian rural communities who solely depend on rain-fed agriculture must be

enlightened on the implications of variation in precipitation and temperature on food production. This can likely improve the adoption and implementation of smart climate agricultural measures and techniques and the use of drought resistance crops as an adaptation measure in combating climate change.

This study is aimed at assessing the perception of climate change amongst university, colleges and polytechnic students within the northeast region of Nigeria. The study also aims to assess the availability of information within these institutions of learning and to understand how accessible information is to students. This is important especially in equipping the younger generations with the necessary information required to adapt and mitigate the impacts of climate change.

Climate Change Awareness

Climate change, its effects and adaptation and mitigation measures have received much attention in developed nations, however, its awareness, especially in developing countries, have not been given the much-needed attention it requires (Ovuyovwiroye, 2013; Saka, 2017). This has likely led to the low acceptability of climate change as an environmental problem in most rural areas of developing countries. In addition, it might likely be why most rural people still indulge in activities such as bush burning and deforestation to produce charcoal used in cooking. These activities have contributed to the cause of climate change and the poor adaptive capacity of most people living in these rural areas. Several studies have

shown that the general awareness of climate change is incredibly low in both urban and rural areas in Nigeria (Akpomi & Vipene, 2016; Harmer & Rahman, 2014; Ogunbode et al., 2019; Ovuyovwiroye, 2013). This can be attributed to several factors such as education, political, social and economic factors. For instance, the level of income is more likely to inhibit where and what kind of information people receive regarding certain issues (such as climate change) (Ogunbode et al., 2019). Also, where people reside can influence their perception of climate change as high-income earners are more likely to adapt to changes and might not be negatively impacted. This can shape the thoughts and perception of people about issues such as climate change and environmental degradation (Haider, 2019; Saka, 2017).

Research Methodology

The method adopted for this study was a quantitative method using a descriptive survey design. It consisted of a survey conducted using a questionnaire that was distributed online. The higher institutions targeted were federal and state colleges of education, polytechnics and universities within the northeast region. The study sampled students in tertiary institutions of learning in the North-eastern part of Nigeria where 400 responses were retrieved and analysed using frequency and percentages. The data were presented in a Tabular and graphical form for more clarity and discussed solely based on the responses. The survey questionnaire was designed in three sections. Section one covered the respondents' general biography covering items such as gender, age, type of higher

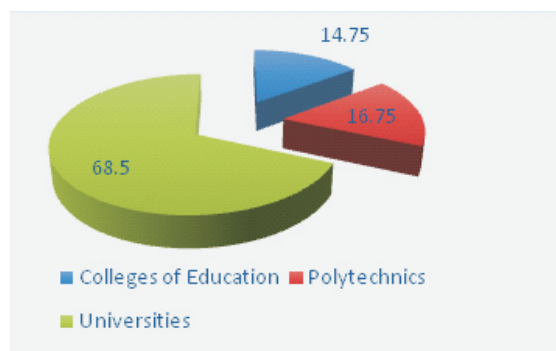
institution the respondent attends, level of study and whether the respondent's background is science or arts. The second section covered the respondents' awareness and perception of climate change while the third section covered the availability and accessibility of information regarding climate change to the respondents.

Results and Discussion

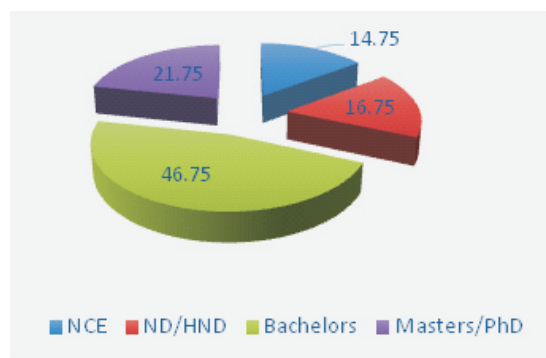
This section presents the survey outcome by outlining and graphically presenting the survey results using percentages and discussed under the three sections with specific sub-headings to argue the problems associated with climate change awareness, perception and the availability and accessibility of information amongst students in higher education institutions within North-eastern Nigeria.

Section One: General Biography of Respondents

This section covers questions about the respondents' biography. From the responses collected, 60.5% of the respondents were female while 39.5% were male. Age distribution indicates that the age bracket of 24-29 (41.75%) constituted the majority of responses followed by 18-23 (33.5%), while 30-35, 36-41 and those above 42 were 18.5%, 4.75% and 1.5% respectively. In addition, the orientation of the respondents shows that 54.25% are studying science-related subjects while 45.75% are studying arts-based subjects at the three tertiary institutions of learning. Students from Universities showed higher responses with 68.5% (Fig 1a) while the majority are studying for a bachelors degree (Fig 1b).



(a). the type of tertiary institution attended



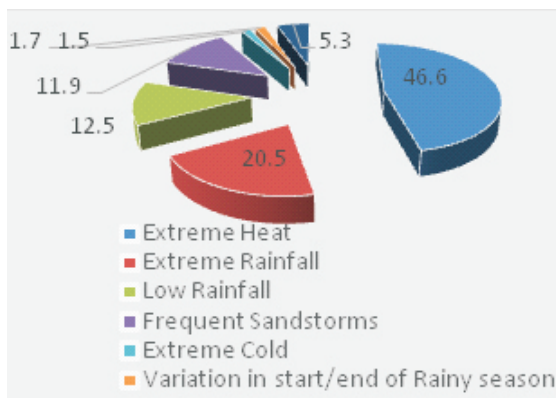
(b). the level of studies of the respondents

Figure 1a: Type of institutions attended by respondents while 1b: the level at which the respondents are studying

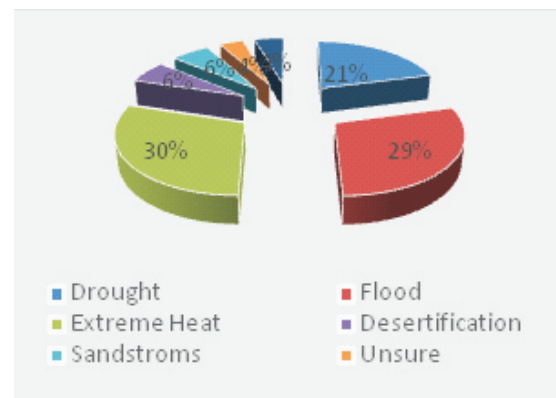
Section Two: Climate Change Awareness and Perception of Respondents

This section presents the level of climate change awareness and perception of the respondents. Responses on the view of respondents regarding changes in the weather pattern within their respective environments show that quite a number of them are aware that the weather patterns have been changing over the past decade. Although, there are still responses that either do not believe the weather pattern is changing or unsure if there are significant changes in their environment. This corresponds to findings from Agbor (2014); Ekpoh and Ekpoh (2011); Ishaya and Agbaje (2008); Olorunfemi (2010). The implication of such perception especially in the fight against climate change is that they can slow or retard progress in mitigation and adaptation plans (Harmer & Rahman, 2014). Ignorance on climate issues increases vulnerability and the number of

vulnerable persons, and is likely to make more severe the impacts due to extreme events. In addition, extremely high temperatures with an intense but short rainy season (Fig 2a & 2b) has been one of the major impacts of climate change within the study area. Students identified this to be the main cause of drought, flood and heat wave the region has been experiencing in the past decade. Consequently, awareness also plays a vital role in behavioural changes especially in activities within both urban and rural areas. The more the number of the informed population on climate change, the greater the actions to reverse or mitigate its consequences. More so, with an informed population, policies and legislation will likely be implemented and easily enforced thereby leading to efficient mitigation of climate impacts. This is true because it is often difficult for the general populace to decide on issues they have little or insufficient knowledge about (Agbor, 2014).



(a). Changes in weather pattern within the respondent's environment



(b). Changes in weather that affected the respondent's environment the most

Figure 2a: the changes currently experienced by respondents in their environment While 2b: Weather changes that affect the respondents' environment the most

Drought, flood and high temperatures resulting in heat waves are the three main changes which the respondents believe affect them the most (Fig 2b). The respondents indicate that drought occurrences are not frequent as flood and high temperatures as it only occurs yearly or once in two years. The result shows that flood and high temperatures either occur always or often with percentages over 45% and 35% respectively (Fig 3). These results can have negative consequences on food

production as both flood and high temperature can destroy crops and deter the planting of crops which will eventually impact food security (Harmer & Rahman 2014). In addition, both floods and heat waves can affect the health and well-being of communities. Overall, these impacts can affect the sustainable development within the regions impacted with devastating consequences on vulnerable people.

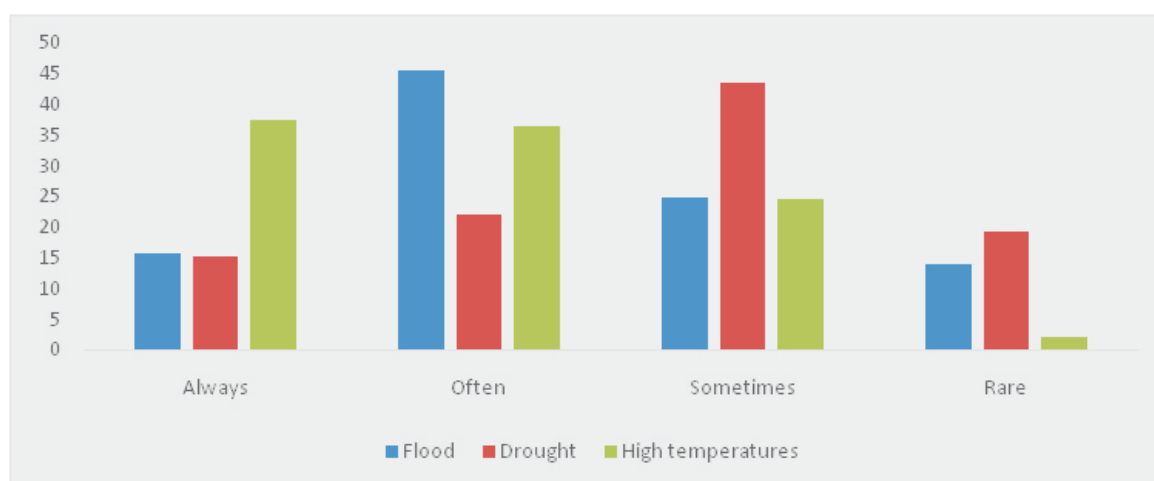


Figure 3: The frequency and occurrence of weather patterns within the respondents' environment

Although there are others with a view that some of these impacts are rare and hence do not constitute effects that should be of concern, they all agreed that if these impacts occur frequently, it can likely deter development especially the sustainable development goals (SDGs). Consequently, the situations regarding those who are either unsure or believe the rare occurrences are not significant enough, calls for a rigorous campaign to educate and create awareness especially on the dangers

of activities that can contribute to climate change (Oyero et al., 2018). Flood, drought and heat-wave are now a major challenge in urban areas. Recently, flood within the urban cities has swept houses and claimed lives leading to the destruction of property worth billions of naira. These are all results of human activities that have been in practice for decades within both rural and urban communities. Farmers and most rural communities have indulged in activities like deforestation and bush burning but

these are just a fraction of the causes as urban communities can likely contribute much more harm through Green House Gas (GHG) emissions than the rural areas. Electricity generation, modes transportation and poor waste management within the urban centres are constituting climate change at an alarming rate as compared to rural areas.

Section Three: Availability and Accessibility of Climate Change related Information

This section highlights the respondents' access to information relating to climate

change, climate change mitigation and adaptation. The responses indicate that there are several media of accessing climate change information. These media include journal articles, textbooks, newspapers, radio, television, government, Non-Governmental Organisations (NGOs), teachers, social media, family and friends. Although these mediums of information are generally used by the respondents, not all are available and easily accessible by students. The results indicate that social media (30% & 32%) are the most available and accessible source of information to students (Fig 4).

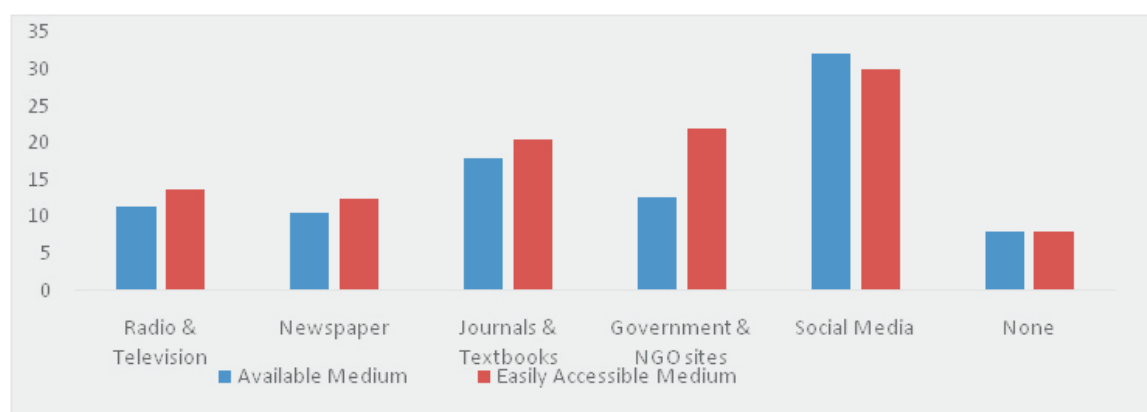


Figure 4: Available and most Accessible medium of information for students

Availability of information can likely influence how knowledgeable students are on the issues confronting their respective environment, however, how accessible these media of information are, plays an even more important role. Most students access information using their phones and the results show that social media contributes to the information they acquire. Although most students do not trust social media platforms, they still use them heavily

of its accessibility. The result shows that Journal articles and textbooks are the most trusted media of information, but they are not easily accessible to students. Students indicated that they are always saddled with challenges while accessing information. The cost of internet data subscription constituted the major constraint students face in accessing information (Fig 5). In addition, the cost of journal subscriptions and textbooks are also major challenges.

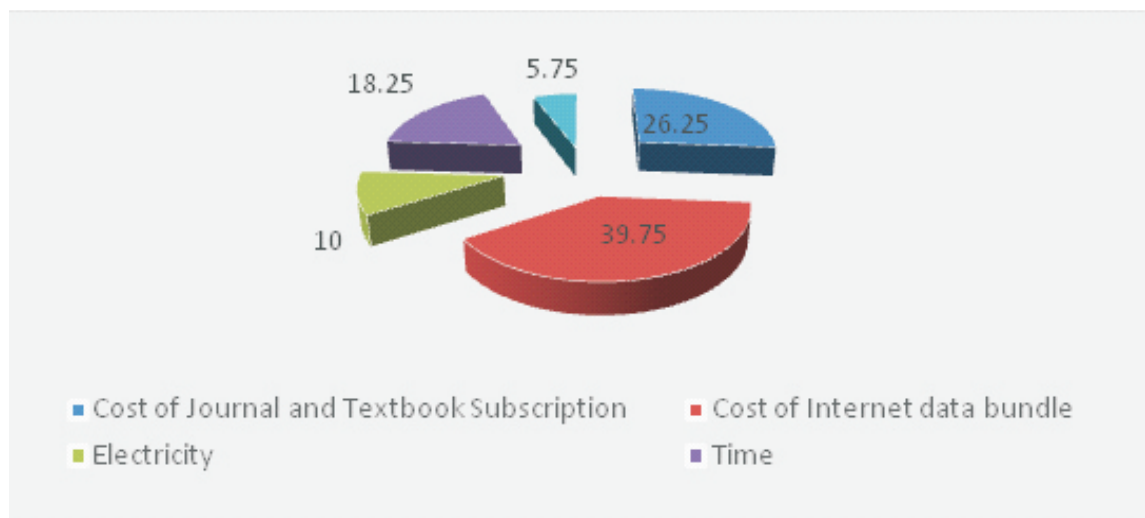


Figure 5: Available and most Accessible medium of information for students

The general implication of the study is that information is vital in the fight against climate change. The information must be prioritised especially for students whose study can influence the success of the Sustainable Development Goals. Most of these students come from rural and remote areas where people are unaware of the consequences of actions such as deforestation and bush burning. Ensuring these students are informed and aware of these negative consequences of their activities on the environment can play a vital role in assisting them to educate their respective communities on the dangers of some of these activities. Tertiary institutions must as a matter of urgency ensure that libraries are equipped with up-to-date books and journals that students can easily access during the course of their studies. More so, climate change must be treated beyond just as an environmental issue but rather as political, social and economical issue. Climate change touches

almost every governmental sector because it affects health, education, water, energy, the economy and every other developmental sector in society.

Conclusion

The study shows that majority of the students are aware of the changes in the climate as the frequency of their occurrences affects their daily livelihood. Information on this is available to them, with some restraints in its accessibility. Climate change being a great challenge to the global community is a vital issue that must be addressed at the grass-root by making information available and accessible to both the rural and urban populace. To enhance the coping mechanisms of the populace, information rightfully provided via the right sources at the right time and place is needful especially in this 21st century. This will ensure that communities are aware of the

risk associated with climate change and that all mitigation and adaptation measures can be effectively implemented. Tertiary institutions can lead in creating awareness by teaching and providing students and the general population with effective media to access the needed information.

Recommendation

To effectively combat climate change and achieve sustainable development, every nation requires an informed population. Information for our teaming students is key and likely to foster both a bottom-up and top-down approach in combating climate change. Northern Nigeria is saddled with both extremely dry and wet environments, with devastating flood and drought during the rainy and dry seasons, respectively. Hence, the following recommendations were articulated as a result of findings from the study:

1. The higher education institutions need to create groups for students to effectively and actively participate and share information that will help combat climate change.
2. Universities, Colleges and Polytechnics should ensure libraries are equipped with adequate materials on climate change.
3. The institutions should involve lecturers and guest lectures for students in the form of workshops, seminars and Questions and Answer sessions to create a platform for students to ask and

share challenging situations and questions on climate issues.

4. Activities such as tree planting and waste management should be incorporated into the institutions yearly programs and ensure students are actively involved.
5. Departmental unions can come together to organise sessions to help create awareness. This way the younger generation are carried along in the fight against climate change

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