Climate Change Attitudes, Beliefs and Intentions Among Young Adults In an Institution of Higher Learning: Does Personality Matter?

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Abstract: The present article is concerned with the relationships between personality traits and climate change attitudes, beliefs and intentions. This was done to determine the relationship that exists between personality traits and attitudes, beliefs and intentions towards climate change issues. A descriptive survey design was used in conducting this study. The sample comprised 203 undergraduate students (116 males and 87 females) selected from various Faculties in Obafemi Awolowo University, Ile-Ife, Nigeria. Convenience sampling technique was used to collect data from the respondents. Their age ranged from 15 to 35 years (M=23.6; SD=5.2). The Big Five Personality Inventory (BFPI) and the Climate Change Attitude Survey (CCAS) were used to collect data from participants. Results revealed that the vast majority of participants agree or strongly agree that human activities cause global climate change. (46% and 37.4% respectively). Furthermore, the results showed that there is a significant influence of personality dimensions on climate change attitudes, beliefs and intentions ({F (5,195) =20.327, p<.05, R^2=.326}). Also, there is no significant difference between undergraduates in science faculties and non-science related faculties on attitudes, beliefs and intention towards climate change ({t (198) =-.827, p>. 05). The study concluded that personality traits are determinants of climate change attitudes, beliefs and intentions among undergraduates in the study area. The outcome of this study has implications for policy-making in the areas of capacity building and climate change education in institutions of higher learning.

Keywords: Climate change, Attitudes, Beliefs, Intention, Personality, Institution of higher learning.

INTRODUCTION

The dynamic interrelationships between man and his physical environment have been studied extensively by researchers and scholars (Clayton, Devine-Wright, Stern, Whitmarsh, Carrico, & Steg*et al*, 2015; Glifford, 2007). Human being craving for means of survival has exerted tremendous pressure without limit on the environment. Human activities have brought about various environmental degradations such as pollution, flooding, erosion and deforestation to mention few. However, one of the most profound ecological abnormalities resulting from man's attitudinal dispositions and behavioural consequences is climate change. In recent times, the environmental impacts of climate change have become a critical ecological issue giving policymakers and stakeholders' serious concern because of efforts to find effective and appropriate adaptation and mitigating strategies against climate change threats in the society. The United Nations Sustainable Development Goals (SDGs) depicted the relevance of climate change, which remains an integral indicator of environmental sustainability. Scientific evidence has revealed that climate change is an all-encompassing threat and the most serious threat to the survival and sustainable development of humanity (Odey, 2012). Globally, climate change has also attracted attention from researchers due to its short- and long-term adverse environmental threats to humanity (Clayton, Devine-Wright, Stern, Whitmarsh, Carrico, & Steg *et al.*, 2015).

However, the continent of Africa has been identified as the most vulnerable to the impacts of climate change. This is because Africa is considered one of the poorest continents in the world and secondly, it is the least able to cope with or mitigate the impacts. Climate change is explained as a change of climate that is attributable directly or indirectly to human activities such as bush burning, farming, mining and others that alter the atmospheric composition of the earth, which leads to global warming (Omotosho, 2007). The Intergovernmental Panel on Climate Change (IPCC, 2007) defines climate change as a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. This definition by IPCC (2007) Fourth Assessment Report (AR4) has been adopted as the acceptable working definition of climate change by experts and stakeholders.

Climate change is caused by natural factors and anthropogenic factors (i.e. human activities). Evidence has established that human factors have been proven to be largely responsible for the aggravation of climate change. (IPCC, 2007). It has been revealed that for the

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past decades, anthropogenic factors such as urbanization, deforestation, population growth, industrialization and the release of greenhouse gases are major contributing factors to the depletion of the ozone layer and its associated global warming and climate change (Buba, 2004; Odjugo, 2007; 2013). Nigeria, one of the most populous countries in Sub-Saharan Africa is not immune to the adverse impacts of climate change. Climate change has been reported to have negative impacts on the Nigerian economy, which range from agricultural productivity to increase in illness, morbidity and mortality rate (Usman & Dije, 2013; Ebele & Emodi, 2016). Furthermore, the Department for International Development (DFID, 2009) submitted an unprecedented report that projected that climate change will cost the Nigerian economy between 6 per cent and 30 per cent of its Gross Domestic Product (GDP) by 2050, worth between 100 and 460 Billion Dollars.

Despite the enormous problems associated with climate change in Nigeria, the response of Nigerian universities has been considered weak (Ingwe, Ikeji, Mboto & Ojong, 2010). To buttress this position, researchers have identified the lack of curriculum context as regards climate change in institutions of learning (Choi, Niyogi, Shepardson, & Charusombat, 2010). This justifies the consideration of an institution of higher learning as a case study in this present study. The non-inclusion of environmental courses in university programmes, lack of funding and poor attitudes and beliefs towards environmental issues, and low awareness as regards climate change are some of the factors accounting for this weak response. Scholars have argued for the need to introduce climate change studies in Nigerian universities (Ayanlade & Margaret, 2016). Some special elective courses have climate change topics in which students can receive brief lectures about climate change risks. However, students in Departments within Environmental and Design Management Faculties and Geography are most likely to have more class experience of climate change due to the fact that they are in a faculty that focuses on the physical and built environment, unlike their counterparts from the Humanities. The truth of the matter is that climate change should not be restricted to any particular disciplines in the universities. Surprisingly there are few or no specialized special elective courses on climate change in many Nigerian universities which gives room for serious concern. From the foregoing, considering the multi-dimensional impacts of climate change in Nigeria, the greatest challenge in tackling climate change is the lack of its awareness, poor attitudinal dispositions and intentions towards climate change, especially among young adults who are mostly in institutions of higher learning.

Research has documented that young people constituted the majority of the world's population and are most vulnerable to environmental risks (National Youth Policy Document, 2009). Therefore, it becomes imperative that attention should be given to how this youthful population reacts and shows favourable dispositions through their attitudes, beliefs and intentions towards environmental issue because the young people would later become national and global leaders with responsibility for environmental stewardship and sustainability (Ilevbare & Ilevbare, 2014). In this study, attitudes, beliefs and behavioural intentions were explored rather than the actual behaviour of climate change. This is in line with Fishbein (1980) who provided evidence that behavioural intentions and actual behaviour are highly correlated. Scholars have revealed that environmental attitudes consist of beliefs, affect, and behavioural intentions which combine to demonstrate general attitudes toward environmentally related issues (DeWaters & Powers, 2013; Ilevbare, 2014). Against this backdrop, intentions and beliefs have been identified in literature as important in science education for decades, of which climate change education is not an exception (Haney, Czeriak, & Lumpe, 1996). Scholar Ajzen (2002) defined behavioural intentions as an indication of an individual's readiness to perform a given behaviour, based on attitudinal beliefs and perceived behavioural control, which are assumed to be an immediate behaviour'. Thus, in demonstrating a positive attitude toward human-induced climate change among undergraduate students, there must be willingness to take pro-environmental action on their parts.

More worrisome, the role of personality differences has received little attention in the literature, particularly among undergraduate university students in Nigeria. The better understanding of personality traits that correlate with pro-environmental attitudes and behaviour could assist environmental psychologists to understand how to design messages and behavioural models that would facilitate individuals to make better decisions regarding climate change.

Personality has been utilized in psychological research to help in identifying types of traits that an individual exhibits that could influence behaviour (Tara,

2015). In literature, the Big-five Personality Model has been used extensively to predict behavioural outcomes (e.g. McCrae & Allik, 2002; Goldberg, 1990). Personality can be defined as the 'sum total of the typical ways of acting, thinking, and feeling that makes each person different from other people' (Lahey, 2009). The environmental factors that exert pressures on our personality formation are the culture in which we are raised, our early conditioning, the norms among our family, friends and social groups, and other influences that we experience. For instance, researchers like Milfont and Selby (2012) found that environmental values and engagement are most related to openness and extraversion, and to a lesser extent, agreeableness and conscientiousness.

However, there has been scant research to show how personality traits relate to pro-environmental attitudes. According to Ilevbare (2014), personality traits have been documented to have a significant influence on pro-environmental behaviour. Scholars (e.g. Ung, Luginaah, Chuenpagdee and Campell, 2015) provided evidence that individual perceived self-efficacy is related to both anticipatory and reactive adaptation to climate change. Studies have also demonstrated that personality characteristics have a relationship with individual's attitudes, beliefs and intentions towards climate change risks (e.g. Skaliks, 2015; Milfont & Selby, 2012; Fang & Yu, 2015). Hirsh (2010) also provided empirical evidence that posited the big-five personality traits of openness, conscientiousness, agreeableness and neuroticism were predictors of pro-environmental attitudes.

Aim and Research Questions

The overall goal of this study, therefore, is to offer insights into the role played by personality traits in predicting climate change attitudes, beliefs and intentions among undergraduate students in Obafemi Awolowo University, Ile-Ife, Nigeria.

From the foregoing, this present study attempts to answer the following research questions: What is the extent of climate change attitudes, beliefs and intentions among undergraduate students in Obafemi Awolowo University, Ile-Ife, Nigeria? To what extent would personality influence climate change attitudes, beliefs and intentions among undergraduate students in Obafemi Awolowo University, Ile-Ife, Nigeria? Would there be a significant difference between undergraduates in science and non-science related Faculties in their climate change attitudes, beliefs and intentions?

METHODS

Research Settings

The study was conducted at Obafemi Awolowo University, Ile-Ife, Nigeria. Obafemi Awolowo University, Ile-Ife is a federally owned university in Nigeria and one of the first generation universities established in 1961. It is located in the ancient city of Ile-Ife, Osun State, Nigeria. The population of students is estimated at 35,000. The university comprises twelve faculties; namely; Agriculture, Administration, Environmental Design Management, Dentistry, Education, Health Sciences, Law, Arts and Humanities, Pharmacy, Sciences, Social Sciences and Technology.

Population

Participants in this study consisted of undergraduate students enrolled in various Faculties at the Obafemi Awolowo University, Ile-Ife in Nigeria. A total of 220 students participated in the study. Participation was based on those who were readily available and easy to reach as some undergraduate students were too busy to take part in the research. 17 responses were excluded from the final data set because of incomplete filling of questionnaires. The final sample consisted of 203 undergraduate students. Of the sample, 116 were males (57.1%) while 87 were females (42.9%). The sample was selected through convenience sampling technique from various Faculties. Their ages ranged from 15 to 35 years (M=23.6 years, SD=5.2).

Measures

Big Five Personality Inventory (BFPI)

This index measures the personality characteristics of the participants. The Big-Five Personality Inventory was developed by John and Srivastava (1999). This scale contains 44-items that measures the personality traits of participants based on the five dimensions of personality (i.e. agreeableness, openness to experience, conscientiousness, neuroticism and extraversion). All 44 items included in the Big Five Inventory are Likert-type with rating scales ranging from 1 = strongly disagree to 5 = strongly agree. Samples of the items include: I see myself as someone who is curious about many different things"; "generates a lot of enthusiasm"; "Is a reliable worker". To score the items, all negatively keyed items were reversely-scored: extraversion (6,21,31); agreeableness

(2,12,27,37); conscientiousness (8,18,23,43), neuroticism (9,24,34) and openness to experience (35,41). According to the authors, internal consistency was tested using Cronbach's alpha, were the following coefficients were obtained: extraversion (α=0.76); agreeableness (α=0.62); conscientiousness (α=0.78); neuroticism (α=0.74) and openness (α=0.77). There were high convergent validity with other self-report scales and high peer ratings on the big five. In this present study, reliability was tested using Cronbach's Alpha. It was found to be α=0.873 for openness, α=0 .687 for agreeableness, α=0.746 for extraversion, α=0.660 for neuroticism, and α=0.786 for conscientiousness. In this present study, a Cronbach alpha of α=.78 was reported for this scale.

Climate Change Attitude Survey (CCAS)

The CCAS measures climate change attitudes, beliefs, and intentions towards climate change of participants. The scale was developed by Christensen and Knezek (2015). CCAS is a 15-item self-report measure designed to assess undergraduates' attitudes toward climate change. Participants assess each item based on how they feel and are prompted to rate their agreement on each item using a 5-point Likert type scale (1 = strongly disagree to 5 = strongly agree). 10 items are related to perceived beliefs about climate change and intentions related to climate change and the environment, while 5 items are related to intentions regarding making a difference to climate change. Samples of the items include: "I am concerned about global climate change"; "Global climate change will impact future generations"; "Things I do have no effect on the quality of the environment". To score the items, 5 items are reverse-scored and then the rest are added together to get a composite score. The authors reported that the CCAS demonstrated excellent psychometric properties. It is reliable based on the internal consistency reliability estimate of α=0.72. The authors have demonstrated criterion-related validity through correlation of the CCAS total score with an established measurement scale which revealed beliefs (α=0.49, p<.0005) and *Intentions* (α=0.15, p<.0005). In this present study, a Cronbach alpha of α=.85 was reported for this scale.

Procedure

Participants were recruited from undergraduate students enrolled at various courses in Faculties at Obafemi Awolowo University, Ile-Ife Campus, Nigeria. Undergraduate students who chose to participate in this study were provided with an informed consent form which they signed. Participants who voluntarily provided consent for the study were directed to provide demographic information and then asked to complete the questionnaire administered. After the completion of the questionnaire, participants were debriefed on the nature and purpose of the study.

Analysis

Both descriptive and inferential statistics were used to analyze the data collected from the field. Descriptive statistics such as percentile counts, mean and standard deviation were used to describe the characteristics of the participants. Inferential statistics such as independent t-test and multiple linear regressions were used to test the hypotheses formulated from the review of literature. First, the data was analyzed in simple percentages to analyze the percentage distribution of respondents on various background information. Data were analyzed with IBM-SPSS Statistics version 23.

RESULTS AND DISCUSSION

Characterisation of Selected Population

Table **1** depicts the participant's socio-demographic characteristics. The table showed that male participants account for 116(57.1%) of total participants, while female participants account 87(42.9%) of the total participants in this study. As regard participants age range, Table **1** indicates that 77(37.9%) of the total respondents fall within the age group 15 – 20yrs, 94(46.3%) of the total respondents are in the age range 21 – 25yrs, 10(4.9%) of the total respondents belongs to the age group 26 – 30yrs, 4(2.0%) of the total participants belongs to 31 – 35yrs while 18(8.9%) of the total participants did not respond to the question. Therefore, the majority of the participants falls in the age range 21 – 25yrs. As regards their religion affiliations 183(90.1%) of the total participants are Christians, 18(8.9%), are Muslims, 1(5%) while others constitute an insignificant number. Furthermore, the table reveals that 142(70%) are non-science based students, 58(28.6%) are science-based while 3(1.4%) did not specify.

Table **2** shows 12(5.9%) of the total participants strongly disagree that climate is changing, 2(1.0%) disagree, 108(53.2%) of the participants agree and 66(32.5%) strongly agree while 15(7.4%) of the remaining participants were undecided. Also in the

Table 1: Characteristics of Participants

Variable	Level	Frequency	Percentage (%)
Gender	Male	116	57.1
	Female	87	42.9
	Total	203	100.0
Religion	Christianity	183	90.1
	Islam	18	8.9
	Traditional	1	.5
	Others	1	.5
	Total	203	100.0
Marital Status	Never married	199	98.0
	Married	4	2.0
	Total	203	100.0
Age group	15-20 years	77	37.9
	21-25 years	94	46.3
	26-30 years	10	4.9
	31-35 years	4	2.0
	No Response	18	8.9
	Total	203	100.0
Faculty	Non-Science	142	70.0
	Science	58	28.6
	Others	3	1.4
	Total	203	100.0

Source: Authors Field Survey.

table, 4(2.0%) of the total participants disagree strongly that human activities cause global climate change, 10(4.9%) disagree, but 93(45.8%) agree and 76(37.4%) strongly agree while 20(9.9%) are undecided. Therefore, the majority of the participants agree that human activities cause global climate change. Furthermore, 8(3.9%) of the participants disagree strongly that knowing about environmental problems and issues is important to them, 14(6.9%) disagree, 111(54.7%) agree and 46(22.7%) strongly disagree while 23(11.3%) were not decided. Hence, most of the participants agreed. Also, the table indicates that 4(2.0%) of the total participants strongly disagree that things they do have no effect on the quality of the environment, 34(16.7%) disagree 74(36.5%) agree and 50(24.6%) strongly agree while 41(20.2%) of the participants were not decided about this. So the majority of the participants agree to this. Finally, in the table, a majority of participants agree or strongly agree that there is nothing much they can do to help solve their environmental problem (70(34.5%) and 76(37.4% respectively). The study examined personality traits and climate change attitudes, beliefs and intentions of undergraduate students at Obafemi Awolowo University, Ile-Ife, Nigeria. The goal of this study is to contribute relevant information on dispositional factors (i.e. personality traits) responsible for climate change attitudes, beliefs and intentions among undergraduate students in Nigeria. A majority of undergraduate students who participated in this study agree or strongly agree that human activities are responsible for global climate change. This outcome is related to the Theory of Planned Behaviour (Azjen & Fishbein, 1980), which posited that there might exist a relationship between beliefs and intentions. Therefore, this theory explains that if an individual evaluates the suggested behaviour as a positive attitude, there is a greater intention to perform the behaviour (climate change actions).These findings are consistent with other studies which found that students who have a more accepting attitude toward climate change are more likely to demonstrate a willingness to take action. (Sinatra, Kardash, Taasoobshirazi & Lombardi; 2012).

Table 2: Percentage Distribution of Respondents Attitudes , Beliefs and Intentions Towards Climate Change

S/N	Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly Agree	*M*	*SD*
1	I believe our climate is changing.	12(5.9%)	2(1.0%)	15(7.4%)	108(53.2%)	66(32.5%)	4.05	.99
2	I am concerned about global climate change.	4(2.0%)	21(10.3%)	30(14.8%)	110(54.2%)	38(18.7%)	3.77	.94
3	I believe there is evidence of global climate change.	2(1.0%)	11(5.4%)	27(13.3%)	118(58.1%)	45(22.2%)	3.95	.81
4	Global climate change will impact our environment in the next 10 years.	7(3.4%)	9(4.4%)	30(14.8%)	92(45.3%)	65(32.0%)	3.98	.98
5	Global climate change will impact future generations	5(2.5%)	11(5.4%)	26(12.8%)	99(48.8%)	62(30.5%)	4.00	.94
6	The actions of individuals can make a positive difference in global climate change.	9(4.4%)	7(3.4%)	14(6.9%)	97(47.8%)	76(37.4%)	4.10	.99
7	Human activities cause global climate change.	4(2.0%)	10(4.9%)	20(9.9%)	93(45.8%)	76(37.4%)	4.12	.92
8	Climate change has a negative effect on our lives.	10(4.9%)	25(12.3%)	52(25.6%)	74(36.5%)	42(20.7%)	3.56	1.09
9	We cannot do anything to stop global climate change.	21(10.3%)	32(15.8%)	38(18.7%)	65(32.0%)	46(22.7%)	3.41	1.28
10	I can do my part to make the world a better place for future generations.	2(1.0%)	8(3.9%)	17(8.4%)	95(46.8%)	81(39.9%)	4.21	.83
11	Knowing about environmental problems and issues is important to me.	8(3.9%)	14(6.9%)	23(11.3%)	111(54.7%)	46(22.7%)	3.86	.98
12	I think most of the concerns about environmental problems have been exaggerated.	11(5.4%)	44(21.7%)	47(23.2%)	66(32.5%)	35(17.2%)	3.34	1.16
13	Things I do have no effect on the quality of the environment	4(2.0%)	34(16.7%)	41(20.2%)	74(36.5%)	50(24.6%)	3.65	1.09
14	It is a waste of time to work to solve environmental problems.	5(2.5%)	19(9.4%)	19(9.4%)	66(32.5%)	94(46.3%)	4.11	1.07
15	There is not much I can do that will help solve environmental problems.	6(3.0%)	22(10.8%)	29(14.3%)	70(34.5%)	76(37.4%)	3.93	1.10

Source: Authors Field Survey.

Multiple linear regressions were used to test the significant influence of personality traits on Climate Change attitudes, beliefs and intentions among undergraduate students in Obafemi Awolowo University, Ile-Ife, Nigeria. Climate change attitude, beliefs and intentions were regressed on personality traits (neuroticism, extraversion, conscientiousness, openness to experience and agreeableness). The results are presented in Table **3**. Table **3** indicates that there is significant joint influence of personality traits on attitudes, beliefs and intentions towards climate change (*$F(5,195)=20.327, p<.05, R^2=.326$).*Further observation from the analysis of results also reveals that the independent variables jointly explained 32.6% variation in attitudes, beliefs and intentions towards climate change. This finding suggests that personality traits of openness to experience (*B=.437, t=4.4487, p<0.05)* and Agreeableness *(B=.677 t=4.865, p<0.05)*independently predict positive attitudes, beliefs and intentions towards climate change while personality traits of extraversion *(B=.037 t=.243, p>0.05),* neuroticism *(B=.073 t=.476, p>0.05),* conscientiousness *(B=.050, t=0.445,p>0.05)*were not found to have an independent influence on attitudes, beliefs and intentions towards climate change risks. In conclusion, the result shows that there is a joint prediction of personality traits on attitudes, beliefs and intentions towards climate change, although not all personality dimensions can independently predict them. Findings suggest that there is a statistically significant joint influence of personality traits on climate change attitudes, beliefs and intentions of

Table 3: Multiple-Linear Regression Analysis of Climate Change Attitude, Beliefs and Intentions by Personality Traits

Variables	β	Std.error	t-val	P-val	R^2	Adj. R^2	F-val
(Constant)	15.053	5.804	2.594	.010	.343	.326	20.327**
Openness	.437	.097	4.487	.000			
Extraversion	.037	.151	.243	.808			
Conscientiousness	.050	.113	.445	.657			
Agreeableness	.677	.139	4.865	.000			
Neuroticism	.073	.154	.476	.634			

(F(5,195)=20.327,p<05, R^2=.326).

undergraduate students. This outcome implies that the attitude, beliefs and intentions towards climate change issues vary according to different personality traits exhibited by the participants. Findings indicated that the independent variables jointly explained 32.6% variation in attitude, beliefs and intentions towards climate change. Findings also showed that personality traits of openness to experience and agreeableness of participants independently favourably influence attitudes, beliefs and intentions toward climate change issues while personality dimensions of extraversion, neuroticism, and conscientiousness were not found to have an independent effect on climate change attitudes, beliefs and intentions. The outcome supports previous findings, for example, the findings of Hirsh (2010), who established that the big-five personality traits of openness, extraversion, conscientiousness, agreeableness, and neuroticism were related to pro-environmental attitudes. The outcome of this finding also corroborates the studies of Fang and Yu (2015) who reported that openness to experience and agreeableness are statistically significant in influencing attitudes and perception towards climate change risks. Similarly, the findings show that agreeableness and openness are significantly associated with environmental concern. In line with the outcome of this study is the work of Wuertz (2014) who found out that participants who scored high in agreeableness and openness were more likely to display pro-environmental attitudes. Furthermore, based on the study findings that personality traits were relevant in climate change attitudes, beliefs and intentions, it was supported by the findings of Tara (2015) whose research using equation modelling suggested that the big-five personality trait of openness was consistently related with environmental concern.

An independent sample t-test was used to test whether there will be a significant influence of faculty type on Climate change attitudes, beliefs and intentions among undergraduate students in Obafemi Awolowo University, Ile Ife, Nigeria. The analysis involves comparing the mean scores of participants on attitudes, beliefs and intentions towards climate change from students from science-based faculties with their non-science based counterparts. The analysis result is presented in Table **4**.

Table **4** shows that there is no significant difference between undergraduate students in science faculties and their counterparts in non-science related faculties on attitudes, beliefs and intentions towards climate change *t (198) =-.827, p>. 05}.* The results also reveal that there was no statistically meaningful difference between undergraduates from non-science (*M=57.80, SD=8.58)* and Science-based faculties (*M=58.91, SD=8.91).* Therefore, the hypothesis which posited that there will be no significant influence of faculty type on attitudes, beliefs and intentions towards climate change is accepted. The second part of the hypothesis focused on whether there would be no significant difference between undergraduates in science-related faculties and their counterparts in non-science related faculties

Table 4: Independent Sample-t-Test Showing the Influence of Faculty Type on Climate Change Attitudes, Beliefs and Intentions

Variables		*N*	*M*	*SD*	*Df*	*T*	*P-val*
CCAS	Non-Science	142	57.80	8.58	198	-0.827	0.409
	Science	58	58.91	8.91			

t (198) =-.827, p>. 05}.

as regards their climate change attitudes, beliefs and intentions. Findings reveal that there was no statistically significant difference between the two groups. This finding is inconsistent with studies of Ayanlade and Margaret (2016), who found that graduates from Departments of Environmental Sciences have more class experience on climate change than students in the humanities and other allied faculties in the university. It is not surprising that this outcome negates the common opinion that students in science-related disciplines are more inclined to consider environmental issues. A possible explanation for this finding may be that the conscious level of environmental concern, sympathy and beliefs expressed by both undergraduates in science and non-science faculties concerning climate change are the same, since climate change is a global issue requiring the attention of everyone, including students in the universities. However, students' exposure to the media about knowledge and beliefs about climate change instead of getting such information from their teachers could also be a major reason for this outcome (Robertson & Barbosa, 2015). Furthermore, some undergraduate students irrespective of their discipline volunteer in joining environmental movements and non-profit organizations to enlighten the public about the adverse impacts of climate change on every human endeavour. Climate change is moving towards a paradigm shift of multi-disciplinary approaches in mitigating against its consequences. Therefore, it is expected that every discipline in both Humanities and Science-related Faculties are relevant to researches and studies of climate change. Against this backdrop, the introduction of climate change studies in universities could play a fundamental role in helping the general public, especially the next generations of youth, to recognize the global challenges of climate change and find ways of adapting to the changing climate.

CONCLUSIONS

Based on the findings of the study, the main conclusions are hereby stated below**:**

(i) As regards attitudes, beliefs and intention toward climate change, a majority of undergraduate students agreed that human activities are responsible for global climate change.

(ii) Personality traits have significant joint influence on climate change attitudes, beliefs and intentions of undergraduate students.

(iii) There was no significant difference between undergraduates in science-related faculties and their counterparts in non-science related faculties as regards their climate change attitudes, beliefs and intentions.

IMPLICATION AND RECOMMENDATIONS

The major focus of this study is to address the extent of attitudes, beliefs and intention toward climate change among undergraduate students in institution of higher learning. It is without a doubt that the findings of this study extended our knowledge on how personality traits are responsible for climate change attitudes, beliefs and intentions. In view of this, the findings of this study have both scientific and practical implications for climate change strategies. In view of this development, the findings of the present study have useful implications for developing intervention programmes to increase participation of students' pro-environmental behaviour as regard climate change action in institution of higher education. This could be achieved by taking into cognizance the personality factors responsible for positive climate change attitudes, beliefs and intentions. The findings also have implications for capacity building of climate change-related actions and compulsory introduction of environmental education in curricula of institutions of higher learning in Nigeria.

Based on the findings of this study, it is recommended that various programme and policies that would suit different personality styles of youths should be established in order to increase active participation in the mitigating activities designed to curb the adverse consequences of climate change on our environment. Campaigns and advertisements through the use of mass media by governmental and non-governmental organizations can increase the level of awareness among youths which would encourage them to adopt environmentally friendly activities. Furthermore, environmental policies as regards climate change should have the youth as their focus and uphold their needs, beliefs, attitudes, perception, knowledge and socio-cultural values.

However, this study was not without limitations. The study has provided measures of some relevant variables, which empirical studies have related to climate change attitudes, beliefs and intentions. The study has established clearly and explained that personality influences the dependent outcome of climate change attitude, beliefs and intentions. This

does not indicate that the factors examined are by no means exhaustive. In this regard, other measures or variables could also be considered in future research such as environmental self-efficacy, environmental activism and environmental identity. It is therefore suggested that future studies should incorporate the afore-mentioned variables into the broader climate change behaviour framework.

The researchers suggest for future research a larger sample that could increase the number of undergraduate students' responses to climate change-related practices in institutions of higher learning of all the geo-political zones in Nigeria. A qualitative method of research should also be considered in order to add to the understanding of dispositional and contextual factors responsible for climate change.

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REFERENCES

Ayanlade, A; & Margaret, O.J. (2016). Climate change education and knowledge among Nigerian university graduates.*Weather, Climate, and Society 8(4), 465-773* https://doi.org/10.1175/WCAS-D-15-0071.1

Ajzen, I; & Fishbein, M. (1980). *Understanding attitude and predicting social behaviour*.Englewood Cliffs, NJ: Prentice Hall

Choi, S; Niyogi, D; Shepardson, D.P; & Charusombat, U. (2010). Do Earth and Environment Science Textbooks promote Middle and High School Students Conceptual Development about Climate Change? *Bulletin of the America Meteorological Society, 91(7),* 889-898 https://doi.org/10.1175/2009BAMS2625.1

Christensen, R; &Knezek; G. (2015). The Climate Change Attitude Survey: Measuring Middle School Students Beliefs and Intentions to Enact Positive Environmental Change. *International Journal of Environmental and Science Education,10(5),* 773-788

Clayton, S; Devine-Wright, P, Stern, P.C, Whitmarsh, L, Carrico, A; Steg,L, Swim,J; & Bonnes, M. (2015). Psychological Research and Global climate Change. *Nature Climate Change 5(7),* 640-646 https://doi.org/10.1038/nclimate2622

Department for International Development (DFID, 2009). Impact of climate change in Nigeria's economy.Final Report; 2009. 10. Facts on Climate Change. By Canada's action on climate change. Available: *http://climatechange.gc.ca/defaultt.asp?lang=En&n=65CD73F4*

DeWaters, J & Powers, S. (2013). Establishing measurement criteria for an energy literacy.*Journal of Environmental Education, 44 (1),* 38-55 https://doi.org/10.1080/00958964.2012.711378

Fang, S.C., &Yu T.Y., (2015). A risk perception model of climate change for university students.*Journal of Baltic Science Education, 14*(3), 339-350

Glifford, R. (2007). *Environmental Psychology*. *Principles and Practice*. (Fourth Edition).Optimal Books. Canada

Goldberg, L.R. (1990). An alternative description of personality: The big-five factor structure. *Journal of Personality and Social Psychology, 59 (16*), 1216-1229 https://doi.org/10.1037/0022-3514.59.6.1216

Haney, J.J; Czeriak, C.M; & Lumpe, A.T. (1996). Teacher beliefs and intentions regarding the implementation of Science education reform strands. *Journal of Research in Science Teaching, 33(9)*, 971-993 https://doi.org/10.1002/(SICI)1098-2736(199611)33:9<971::AID-TEA2>3.0.CO;2-S

Hirsh, J.B. (2010). Personality and environmental concern. *Journal of Environmental Psychology*, *30*, 245–248. https://doi.org/10.1016/j.jenvp.2010.01.004

Intergovernmental Panel on Climate Change (IPCC, 2007). Climate change impact, adaptation and vulnerability: Contribution of working group II to the Forth Assessment Reports of the IPCC. Cambridge University Press, Cambridge

Ilevbare, F.M. (2014). Locus of Control, Environmental Attitude and Self-Efficacy as Predictors of Environmentally Responsible Behaviour among Residents in South-western, Nigeria. Unpublished Doctoral Thesis Submitted to Obafemi Awolowo University, Ile-Ife, Nigeria

Ilevbare. F.M & Ilevbare, O.E. (2014). Environmental Concerns and Behaviour as Context for Sustainable Development: Any Responsibility for Nigerian Youth? *Ife Social Sciences Review, 23(1)*26-35.

Ingwe, R; Ikeji, C.C.C; Mboto, W.A; & Ojong, F.E. (2010). Response of Nigerian Universities to Climate Change Impacts: An analysis of Programmes and Initiatives in Selected Universities. *International Journal of Educational Research and Technology, 1(1),* 9-18

Tara, R.W. (2015*). Personality traits Associated with Environmental Concern*. PhD dissertation submitted to Walden University, USA

John, O. P., & Srivastava, S., (1999). The Big-Five Trait Taxonomy: History, Measurement, and Theoretical Perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of Personality: Theory and Research, 2,102*–138. New York: Guilford Press.

McCrae, R. R., & Costa Jr, P. T. (1996). Personality Trait Structure as a Human Universal. *American Psychologist, 52*(5), 509. https://doi.org/10.1037/0003-066X.52.5.509

Milfont,T.L., & Sibley, C.G. (2012). "The Big five Personality Traits and Environmental Engagement: Associations at the individual and societal level". *Journal of Environmental Psychology, 32*(2),187–195. https://doi.org/10.1016/j.jenvp.2011.12.006

National Youth Policy Document, (2009). *National Youth Policy Document 2009*

Odjugo, P.A. O. (2007). The Impact of climate change on water resources, global and regional analysis. *Indonesian Journal of Geography, 39(1),* 23-41

Odjugo, P. A. O. (2013). Analysis of climate change awareness in Nigeria. *Academic Journals 8* (26), 1203-1211, doi: 10.5897/SRE11.2018

Omotosho, J.A. (2007). *Melting ice and Climate change: Why Should I care*. A Paper delivered on the Occasion marking 2007 World Environment Day Celebration held at the Ondo State Library Complex on 5th, June, 2007

Robertson, W.H; & Barbosa, A.C. (2015). Global Climate Change and the Need for Relevant Curriculum. *International Journal of Learning and Educational Research, 10(1),* 35-44

Sinatra, G.M; Kardash; C.M; Taasoobshirazi,G; & Lombardi, D. (2012). Promoting Attitude Change and Expressed willingness to take Action Toward Climate Change in College Students. *Instructional Science, 40(1),* 1-17 https://doi.org/10.1007/s11251-011-9166-5

Skalík J., (2015). Climate Change Awareness and the Attitudes of Adolescents in the Czech Republic. *Envigogika: Charles University E-journal for Environmental Education 10*(4), 1-19 https://doi.org/10.14712/18023061.472

Usman Y.D & Dije B.I (2013). Potential challenges of climate change to the Nigeria economy. *IOSR Journal of Environmental Science, Toxicology and Food Technology; 6(2)*:07-12. https://doi.org/10.9790/2402-0610712

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