



## Exploration of Climate Change Awareness among Students at a South African Public University

DE Uwizeyimana; C. Sekgobela

School of Public Management & Public Policy, University of Johannesburg, South Africa

E-mail: [aldegondapelealu@unima.ac.id](mailto:aldegondapelealu@unima.ac.id)

<http://dx.doi.org/10.47814/ijssrr.v6i10.1658>

---

### **Abstract**

This study aimed to explore climate change awareness among students at a South African public university. The quantitative research method was applied in this study. Due to Covid-19 protocol requirements, a semi-structured electronic questionnaire was used to collect data from students at one South African public university whose name is withheld due to confidentiality requirements. One of the main findings of this study is that most respondents from this particular South African public university are aware that climate change is indeed happening. However, most participants in this research needed to be made aware of the international conventions that deal with climate change or climate change. These findings call for intensifying climate change awareness among South African university students across all media outlets. The study recommends that climate change and climate change awareness and combatting strategies be part and parcel of social and economic development programmes at local, national, continental, and global levels. It is vital to ensure that all citizens in general, as well as university students who are likely to be future leaders of communities and countries, have access to scientifically proven evidence on climate change and its impacts from reliable sources, some of which are highlighted in this study.

**Keywords:** *Awareness; Climate Change; Environment; Global Warming*

### **Introduction**

Climate change and climate change have been getting more attention in the news (Leiserowitz & Smith, 2010a, p. 8). These concepts "have also recently entered the vocabulary of non-scientists, politicians and ordinary people on the street, and politicians and global leaders are also increasingly using these terms in their rhetoric regularly" (Chilunjika & Uwizeyimana, 2015, p. 204). "Climate change refers to the idea that the world'sworld's average temperature has been increasing over the past 150 years, [and] may be increasing beyond man'sman's tolerance of the temperature in the atmosphere in the future" (Emetu, 2007, p. 1). Climate change could lead to global climate change (Leiserowitz & Smith, 2010b, p. 8). There have been extraordinary and extreme weather changes, which have had catastrophic effects almost everywhere, including South Africa. The catastrophic consequences of the tsunamis in New

Orleans and the Mississippi Gulf (2005), the destruction of the Indonesian islands in 2004 and 2006, and the earthquakes in Haiti, the Philippines, and many other areas of the world, are still remembered by many people (World Watch Institute 2006:1). The most recent climate change-related events on the African continent include when Tropical Cyclone Idai ravaged Zimbabwe, Mozambique, and Malawi in 2019 (Tinarwo, 2020). Many of these natural disasters have contributed to massive losses of human life and property, all of which can be directly related, without exception, to the effects of climate change (Chilunjika & Uwizeyimana, 2015, p. 213). Such changes will undoubtedly continue to have a long-term negative impact on societies if nothing is done to combat them (where possible) or at least to minimise their effects (where combatting them is impossible). All around the world, states, private corporations, and individuals are expected to actively manage climate change problems and their environmental and socioeconomic effects to tackle them or reduce their impacts.

There is an immediate need to respond to its massive impact because of the many concerns associated with climate change. Awareness-raising among future leaders is crucial if one considers the fact that "they are the new citizens and rulers who must deal with the effects of climate change" (Narksompong & Limjirakan, 2015, p. 1). The youth and, most importantly, university students have the potential to become experts with the scientific and management capacity to devise and implement climate change plans. Young and future leaders have the potential to succeed where older generations of leaders have failed or are failing. The inclusion and participation of young people also have the potential of creating opportunities for intergenerational cooperation and cross-pollination of views between the past, present, and potential future leaders in finding the most appropriate solution for the most challenging problems the world is facing (Narksompong and Limjirakan 2015:1). The best way to deal with climate change issues facing the world today, and in the future, maybe to include young people to drive the process of seeking a solution to climate change problems, as well as making them drivers for finding and implementing climate change mitigation strategies (Karl and Trenberth 2003:23). This goal can be achieved through collaboration with higher education institutions such as universities (Geuna and Muscio 2009:93). As Al Yousuf (2016) indicates, there is a need to make full use of the influence of the youth and make it an obligation for institutions of higher learning to raise awareness, involve young people, and provide climate change-related training programmes to prepare them to overcome climate change challenges. Higher education institutions could also be used to increase the general awareness of their citizens, as youths can influence societies and create critical structures and innovations to address the world's environmental challenges and climate change problems (Al Yousuf, 2016, p. 5). Therefore, the fact that youth and university students are likely to be future leaders and policymakers is not the only reason they should be involved in climate change issues. They are also more likely to face significant climate changes in the future than the current generation is facing today. Suppose one considers the situation described in this section. In that case, it becomes clear why it is crucial to assess the state of South African public university students' awareness of climate change and its consequences. This research was conducted at one specific university in South Africa and sought to assess the state of South African public university students' awareness of climate change and its consequences and to recommend strategies that could be implemented to address the lack of such awareness among students at South African public universities. **This study aims** to explore climate change awareness among students at a South African public university.

### ***Research Methodology***

For this study, the researcher used a questionnaire with 35 closed-ended questions where respondents had to choose or rate the options provided to elicit their awareness of climate change and its consequences. The quantitative approach as a data-gathering method is underpinned by positivist paradigm research.

### ***Context of the Study***

The research population for this research was based on a cosmopolitan, comprehensive public university located in the Gauteng province, South Africa. This university has been transformed into a diverse, inclusive, transformative, and collegial institution over the last 15 years with a student population of over 50 000; of which more than 3 000 are international students from 80 countries. The university has many South African students from all nine provinces, rural and urban, white and black, whose first language covers the spectrum of the 11 official South African languages. The African languages include Xitsonga, Sepedi, Setswana, isiZulu, isiXhosa, isiNdebele, Siswati, and Tshivenda, and non-African languages include English and Afrikaans. The researcher found this cosmopolitan university to be the most convenient for assessing students' awareness of climate change and its consequences because most students are from rural areas with limited or no access to information on climate change awareness and its impact.

### ***Study Population and Sample***

A population is identified as all elements that meet the sample criteria for inclusion in a study (Burns & Grove, 1993, p. 779). The sample population contained undergraduate and postgraduate students from the chosen South African public university. Seventy-eight subjects who met the sample criterion (of being university students at the selected university at the time of the research) were identified and contacted by the researcher on the online platform provided by the South African public university at which this research was conducted. However, the survey contained only 30 individuals who could engage willingly in the study during the data-collection period of one month. The online database and platform were the preferred method due to the lockdown restrictions posed by the COVID-19 pandemic. Due to the COVID-19 lockdown restrictions, questionnaires were distributed by the researcher via social media. These included Facebook, WhatsApp, e-mail, and Google Forms (Google Links) through the university database. The electronic data were collected via electronic platforms over one month, and no physical contact between the researcher and the research participants was allowed due to the COVID-19 lockdown restrictions.

### ***Data Analysis Methods***

Data analysis is a method of simplifying and arranging data to generate conclusions that enable the investigator to understand the topic under study (Burns & Grove, 2003, p. 479). Statistical Package for the Social Sciences (SPSS version 12.0 for Microsoft Windows) was used to analyse the responses on climate change awareness among students at a South African public university. Data from the Climate Change Awareness Survey were entered into a Microsoft Excel spreadsheet to begin this study's data analysis, transferred to SPSS files, and recorded for statistical analysis. The first step in the analysis was to compute the questionnaires' descriptive data for each respondent in the study. This included statistics such as percentages and frequency distribution, demographic frequencies, and cross-tabulations of age, gender, etc.

### ***Presentation and Discussion of the Findings***

As mentioned in the previous paragraphs, this study aimed to explore climate change awareness among students at a South African public university. The following sections discuss the respondents' responses to the questions related to their awareness of climate change, its impact on society, and personal experience about the effects of climate change on respondents' well-being, beliefs and myths about the causes of climate change, level of certainty about whether climate change is happening or not, which are presented in graphs and tables.

### Is It True That Climate Change Happening or Is It a Myth?

One of the main problems investigated in this study is whether participants believe that climate change is a real problem people should be worried about. Figure 1 illustrates the responses to the question probing whether climate change is a ‘myth’ (it is not happening). Participants were provided with varying options to agree or disagree.

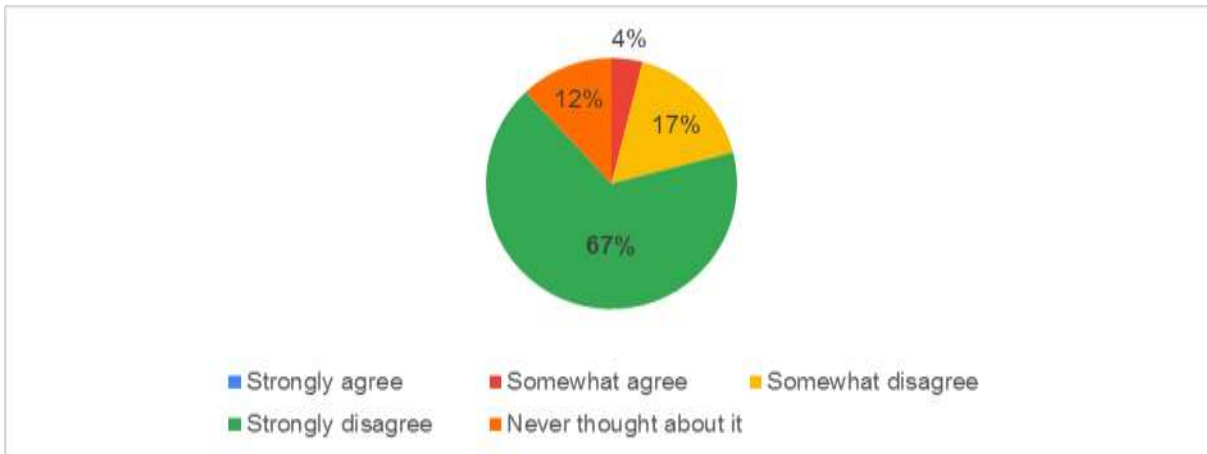


Figure 1: Is climate change a ‘myth’ (it is not happening) or not?  
Source: Created by the author (2023)

Figure 1 demonstrates that 67% of the participants strongly disagreed with the statement that “Climate change is a ‘myth’ (it is not happening)”. They were seconded by 17% of the respondents, who somewhat disagreed with the statement that climate change is a myth (it is not happening). It can thus be argued that most of the respondents (84%) knew and believed that climate change is not a myth and is indeed happening in our time. There is a correlation between the responses to this question and the responses to Question 2 (“Do you think that climate change is happening?”) and Question 3 (“How sure are you that climate change is happening?”), almost every respondent ( $\pm 95\%$ ) said that they were extremely sure or very sure that climate change is happening. These findings are supported by the literature, which states that “climate change and climate change have been getting more attention in the news” in recent years (Leiserowitz & Smith, 2010b, p. 8) and that these terms “have also recently entered the vocabulary of non-scientists, politicians and ordinary people on the street ... and politicians and global leaders are also increasingly using these terms in their rhetoric regularly” (Chilunjika & Uwizeyimana, 2015, p. 204).

### Do You Believe Climate Change Is Happening?”

Figure 2 demonstrates that 94% of the respondents thought climate change is happening now. The findings in Figure 2 confirm the findings of many scholars and international institutions such as Emetu (2007:20), the IPCC (2007:2), the Union of Concerned Scientists (2009:1), Swilling and Anneck (2012:22), and National Geographic (2014:1), to name but a few, who had confirmed in the literature reviewed by this study that climate change is indeed happening and has been happening for a long time before humans were around. Based on this analysis, there is no question that South African public university students are aware that climate change is happening.

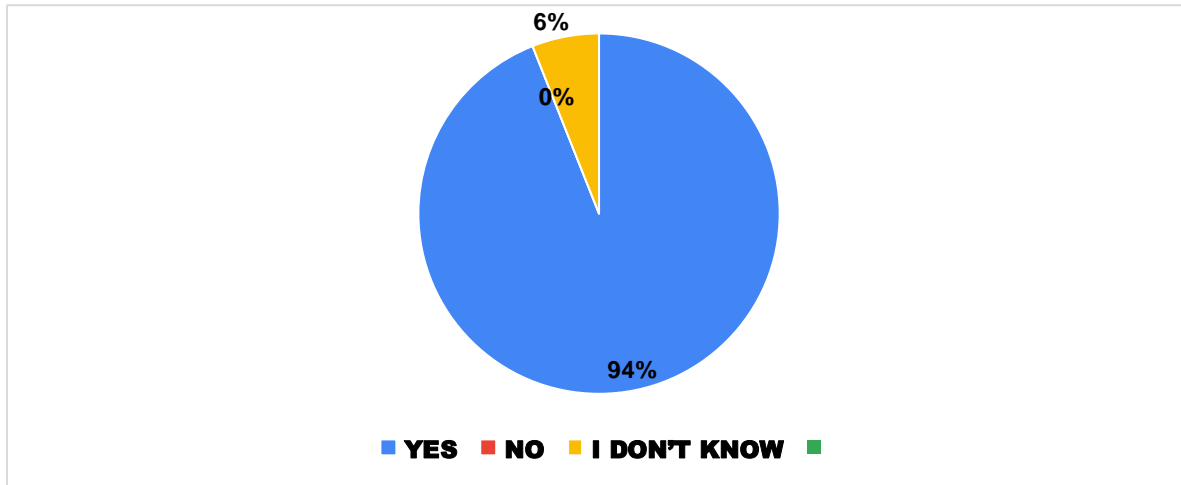


Figure 2: Responses to Question 2: Do you believe climate change is happening?  
Source: Created by the author (2023)

### If You Believe That Climate Change Is Happening– How Sure Are You?

After identifying what the respondents thought about whether climate change is happening, the researcher determined how sure the respondents were that climate change is happening. Figure 3 shows that many participants (94%) indicated a strong awareness of climate change and believe it is happening. Among them were seven (29%) participants who claimed that they were extremely sure that it was happening, while most respondents (66%) indicated that they were very sure that it was happening. This indicates that almost everyone who participated in this research (95%) was very sure and convinced that climate change is happening during their lifetime. According to the World Nuclear Association (2013), an increase in the population, which results in high traffic and supply demands, is an assurance that climate change is happening and is bound to increase. The following section focuses on respondents who do not believe climate change is happening.

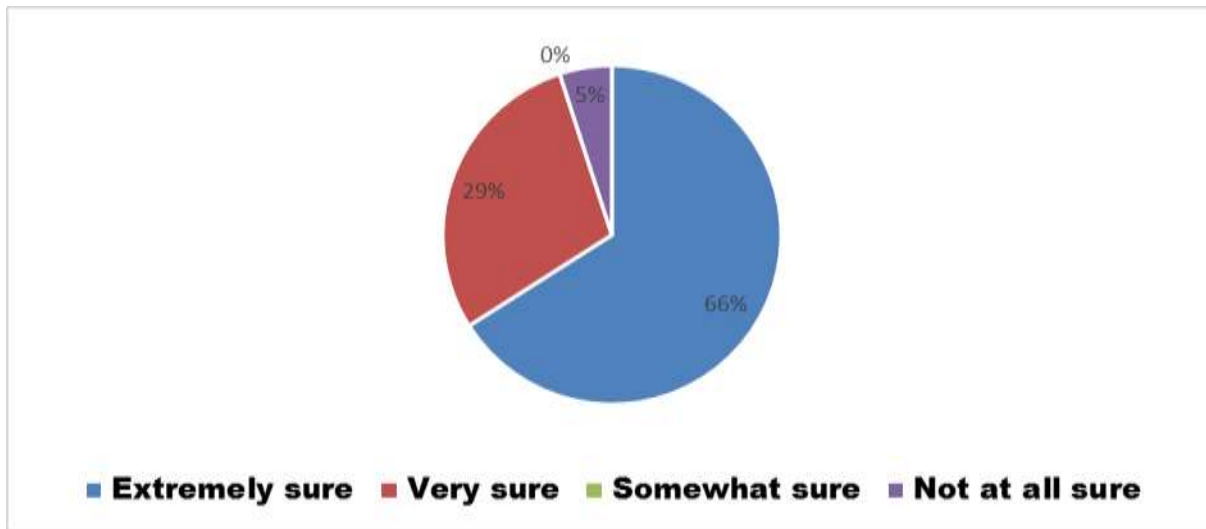


Figure 3: How sure are you that climate change is happening?  
Source: Created by the author (2023)

### If You Do Not Believe That Climate Change Is Happening – How Sure Are You?

The analysis of Figure 3 above indicated that 6% of the respondents (i.e., seven) were unsure if climate change was happening. Figure 4 shows that 15% of the seven respondents who stated that climate change is not happening indicated that they were "extremely" sure that climate change is not happening. It also shows that 46% of the seven respondents were very sure that climate change is not happening, while 30% were somewhat sure that climate change is not happening. It also shows that only 9% of the seven respondents were unsure that climate change is not happening. This means that those who think climate change is not happening strongly believe in their views. However, as this research shows, only a minority of the respondents did not believe climate change is happening.

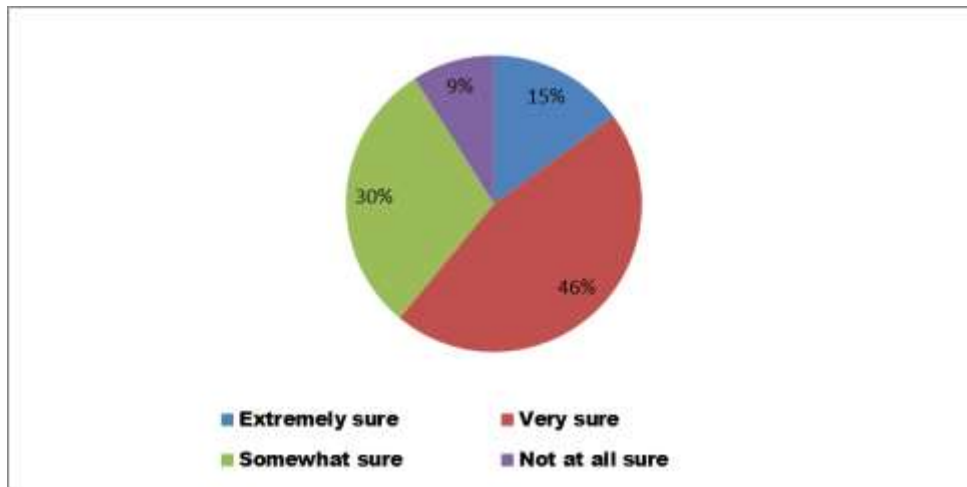


Figure 4: How sure you are that climate change is not happening?  
Source: Created by the author (2023)

### Personal Experience about the Effects of Climate Change

After probing whether participants believed the reality of climate change, the researchers went further to probe experiences with climate change on a personal level. Figure 4 shows that 45% of the respondents strongly agreed that climate change is happening and that they have personally experienced its effects. The graph further illustrates that 49% of the participants "somewhat" agreed that they have personally experienced the effects of climate change. In comparison, 6% strongly disagreed that they have personally experienced the effects of climate change. This means that most respondents (94%) have personally experienced the effects of climate change. This is an exciting finding because it disproves and challenges the belief that personally experiencing the effects of climate change does not change people's perception of it. For example, 94% of the respondents have personally experienced the effects of climate change. However, Figure 5.22 indicated that 67% of the respondents (25% regarded climate change as a critical issue from their perspectives and 42% regarded it as a critical issue) thought it was critical to them. Of course, 67% is lower than 94% if one compares the statistics; however, 67% is also a large number of people who have experienced the effects of climate change and now consider it a severe issue. In reality, there is a small number of respondents who do not take climate change seriously (21% viewed it as a somewhat important issue, and 12% regarded it as a not very important issue), which is not significant enough to confirm and support Whitmarsh's (2008) argument that there is no significant relationship between personal experience and climate change awareness and perception. According to Whitmarsh's (2008) study, victims of air pollution are the only ones who appeared to be more aware and concerned about climate change than other people, compared to the victims of floods. However, even if most respondents had no personal experience with climate change's effects, research shows that this would be okay. This is because experiential learning only occurs among people still sceptical about

climate change. According to Weber (2013), personal experience only shapes the beliefs about climate change for individuals who do not already have "strong beliefs about the same but are less likely to influence the level of awareness for people with a firm belief in climate change". Figure 4 illustrates the responses to "I have personally experienced the effects of climate change" (with varying options to agree or disagree).

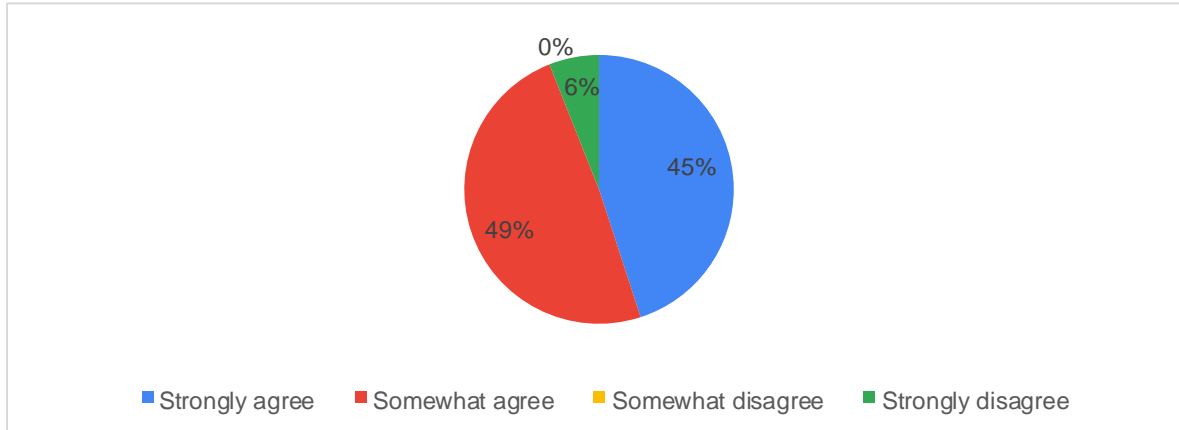


Figure 4: Have you ever personally experienced the effects of climate change on personal level?  
Source: Created by the author (2023)

### The Causes of Climate Change

After probing the belief about climate change, the researchers wanted to find out what participants thought were the natural causes of climate change. Figure 5 shows that 54% of the respondents believed that human activities cause climate change, 42% believed that both human and natural factors cause it, and 4% believed that it is caused mainly by natural changes in the environment. In summary, most respondents (96% = 54% + 42%) believed that humans (and their activities) are the leading cause of climate change. This finding supports and confirms the literature, which has shown that climate change is caused mainly by human activities (Wallington et al., 2013; DEA, 2012, p. 13; Swilling and Annecke 2012:22). Figure 5 illustrates the responses to the question: "Assuming that climate change is happening, do you think it is...?" (with various options provided).

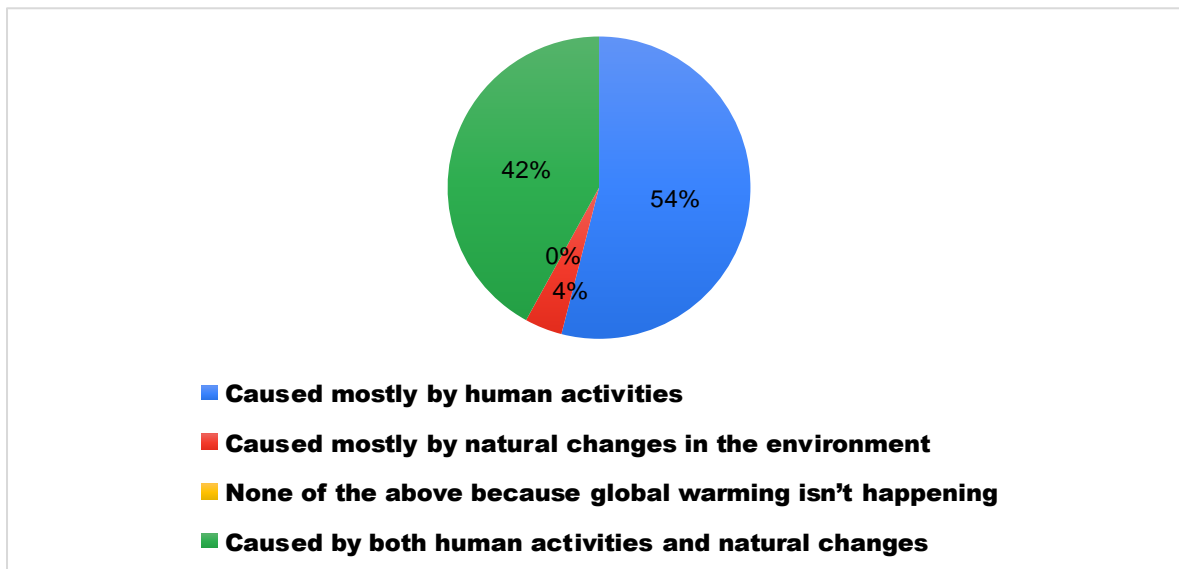


Figure 5: What do you think is/are the causes of climate change? Source: Created by the author (2023)

### Belief about the Role of God in Destroying the World with Fire

The researcher wanted to exhaust all possible climate change cases and how individual beliefs and religion are attributed to the causes of the climate change problem. Figure 6 shows that 43% of the respondents strongly disagreed, and 27% disagreed that the saying “God will destroy the world with fire” concerns climate change. Eleven per cent of the respondents strongly believed, and 19% somehow believed that God would destroy the world with fire, which is why the world is facing climate change. However, 30% of the respondents blamed God for climate change, while the majority (70%) did not believe God is behind the climate change problem the world is facing. Figure 6 illustrates the responses to the statement: “The saying ‘God will destroy the world with fire’ has to do with climate change we are facing” (with varying options to agree or disagree).

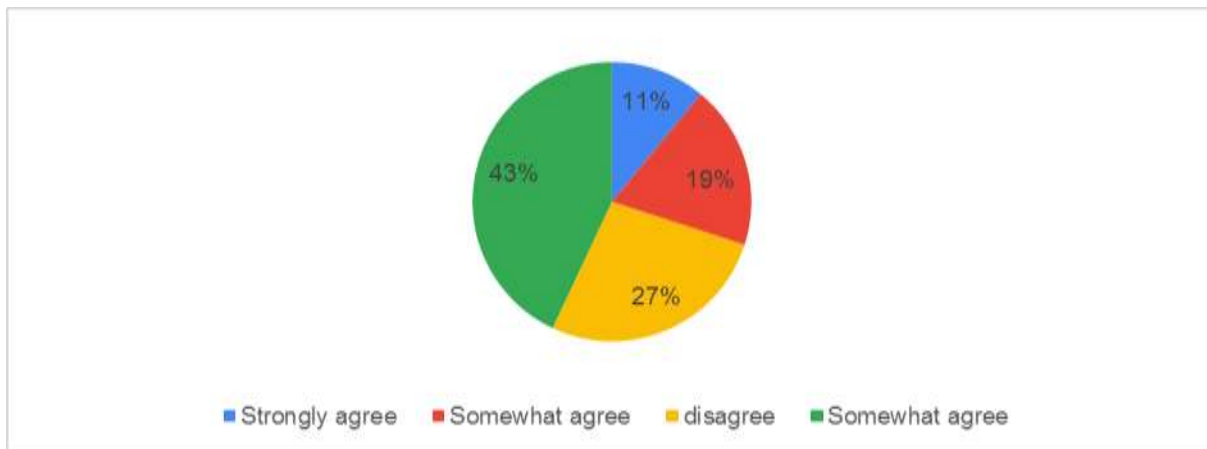


Figure 6: Do you believe the saying ‘God will destroy the world with fire’ has to do with climate change we are facing?

Source: Created by the author (2023)

### Respondents’ Effort to Think about Climate Change before the Interviews

After discovering the participants' beliefs about climate change and its causes, the researchers wanted to determine if the respondents tried educating themselves about it. Figure 7 shows that 43% of the respondents had thought about climate change a lot before interacting with the researcher and that 26% had given it some thought before their invitation to participate in this study. Twenty-two per cent of the respondents claimed that they had thought a little about climate change, while 9% of the participants admitted having never thought about it. The finding shows that some people think about climate change sometimes, but for most respondents (57%), climate change and its impacts are outside their daily agenda. These findings confirm the literature that suggests that climate change remains an emerging issue "mostly arising from international locations and often mentioned by politicians and South African media as an extra concern, under the shadow of what most governments think are more concerning issues such as unemployment, poverty, inequality, economic growth and food insecurity" (IPCC, 1996, p. 14). The findings also vindicate Wilson's (2011:1) argument that studying people's perceptions of climate change is usually difficult because the concept of climate is not something people usually think extensively about. Figure 7 illustrates the responses to the question: "How much have you thought about climate change before today?"



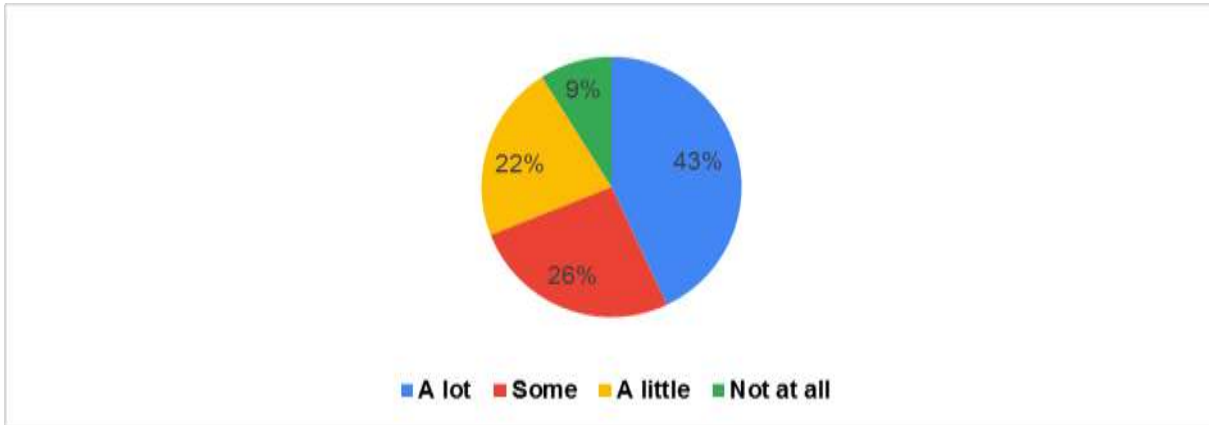


Figure 7: How much have you thought about climate change before today?  
Source: Created by the author (2023)

### Willingness to Change the Mind about Climate Change after Being Made Aware of It and Its Impacts

Figure 8 shows that it would be easy for 21% of the participants to change their minds about climate change. It further shows that 42% of the participants moderately agreed that they could easily change their minds about climate change. The graph further shows that 12% of the participants agreed that it could be easy for them to change their minds about climate change, 12% claimed that it would not be easy at all for them to change their minds about climate change, and 12% claimed that they did not know how easily they could change their minds about climate change. These findings demonstrate that most participants (63% = 21% + 42%) would find it very easy to change their perspectives about climate change, and at least 88% of the respondents could somehow change their minds about climate change. This finding aligns with UNESCO's (2009) argument that through media and fundamental education about climate change, there could be a positive influence on the world's view of and response to climate change. Figure 8 illustrates the responses to the question about how much they agree or disagree with the statement: I could easily change my mind about climate change.

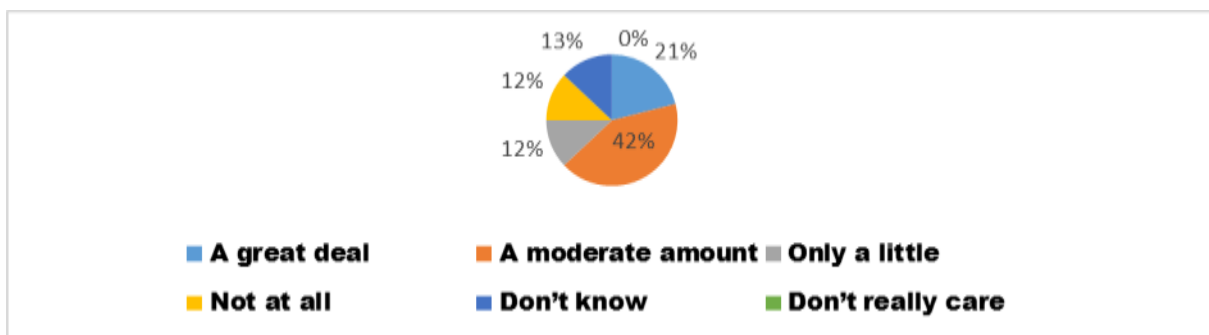


Figure 8: How could you easily change my mind about climate change?  
Source: Created by the author (2023)

### Knowledge about What to Do to Combat Climate Change

After probing the respondents' views about the realities of climate change and its impact on society and individuals, the researcher wanted to determine whether the respondents knew how to combat it. Figure 9 indicates that 83% of the respondents knew what to do to combat climate change, while 17% did not know what to do to combat climate change. It is important to note that there is a correlation

between 94% of the respondents in terms of Question 1 who thought that climate change is happening, 96% of the respondents in terms of Figure 5 who believed that human activities are the leading cause of climate change, and the 83% of respondents in terms of Figure 5 who knew that climate change is happening and knew exactly what to do to combat it. This finding is very encouraging because most respondents who knew that a problem existed also knew what was causing it and what to do to combat it. These results validate the argument made by the Union of Concerned Scientists (2009:1) that humans know what the leading causes of climate change are (such as gas flaring, burning coal to produce energy, cars, etc.); hence they also know what to do to combat climate change, and that it is in their power to stop or reduce the harmful effects of climate change. Figure 9 illustrates the responses to the question: “Assuming that climate change is happening, do you know how to combat it?”

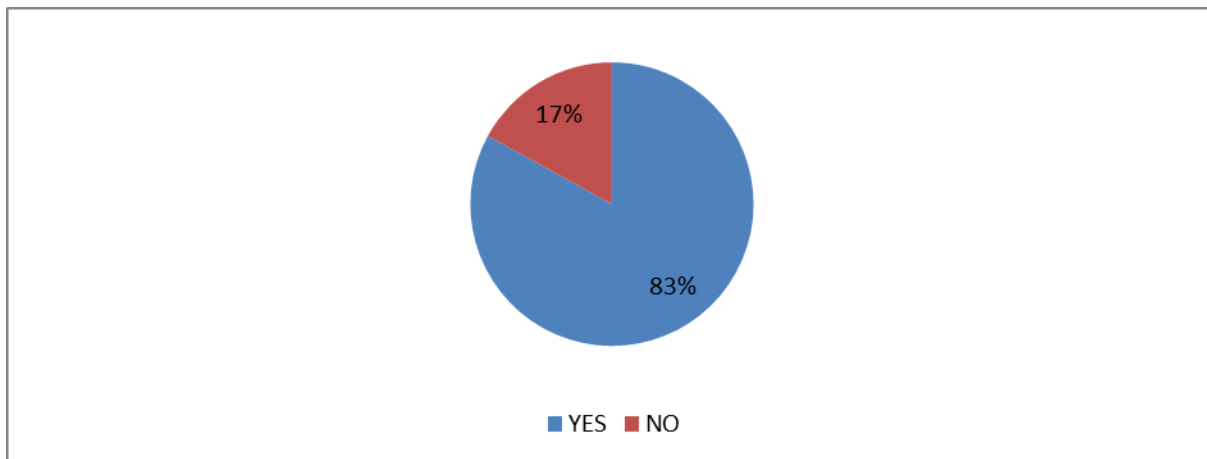


Figure 9: What to do to combat climate change?  
Source: Created by the author (2023)

### Things to Do to Combat Climate Change

Assuming that respondents knew what to do to fight climate change, list some of the things you could do to stop it in this table”, which sought to elicit their views on how climate change can be prevented. The participants shared the following views on how to fight climate change, as indicated in Table 1.

Table 1: Things to do to combat climate change and its impacts

1.	Stop deforestation and encourage green lands.
2.	Stop burning fossil fuels.
3.	Stop or at least reduce air and water pollution.
4.	Practice the Triple Rs, i.e., Renew, Reuse, and Recycle.

Source: Created by the author (2023).

The results in Table 1 indicate that the respondents knew what to do to combat global or prevent climate change. All the respondents listed stopping deforestation and burning fossil fuels, encouraging green lands, stopping air and water pollution, and practising the Triple Rs (Renew, Reuse, and Recycle) as some of the things people can do to address climate change problems. However, the fact that the respondents were fully aware that humans could reduce climate change and knew very well what to do to combat climate change and climate change does not mean they were willing or going to do what they knew to be a solution. This research found that only a handful of respondents (19%) were willing to do something, while the majority of the respondents (81% = 70% + 11%) stated that they were not willing to do anything about climate change (Whitmarsh, 2008).

### The Willingness to Do Something to Combat Climate Change and Its Effects

Figure 10 shows that 19% of the respondents thought the statement “Humans can reduce global warming, and we are going to do so successfully” came closest to their views. The graph also demonstrates that 48% of the participants indicated that the statement “Humans could reduce global warming, but it is unclear at this point whether we will do what is needed” came closest to their views. It demonstrates that six participants (22%) chose the statement “Humans could reduce global warming, but people are not willing to change their behaviour, so we are not going to” came closest to their views. These findings clearly show that only a handful of respondents (19%) believed that humans could reduce global warming and that they would do so successfully. However, the finding that most respondents (81% = 70% + 11%) stated that they were not willing to do anything about global warming suggests that few people are willing to do anything about it. They are fully aware that humans could reduce global warming. However, they are not willing to change their behaviour and will not do anything about global warming to increase their resilience level (Whitmarsh, 2008). Figure 10 illustrates the responses to the question: Do you think humans can combat climate change and its effects?



Figure 10: Do you think humans are capable of combatting climate change and its effects?

Source: Created by the author (2023)

### Knowledge about Local and International Laws Dealing With Climate Change

Figure 10 shows that most of the participants (62%) claimed that they knew of an international convention dealing with climate change or climate change, while 38% claimed that they were unaware of any. This is potentially a severe problem in the fight against climate change and its impact on South Africa because, according to Clarke (2014:2), the literature shows that adequate knowledge of the conventions that deal with climate change could assist nations and their people in the fight against climate change and its impacts. Thus, the more people are aware of these conventions, and the easier it will be for governments to reduce aggressive climate changes resulting in natural disasters. Therefore, while most respondents (62%) knew about international conventions that deal with climate change or climate change, it is still a severe problem that as much as 38% of the university students needed to learn about

international conventions on climate change. Figure 10 illustrates the responses to the question: Do you know of any international convention that deals with climate change or climate change?

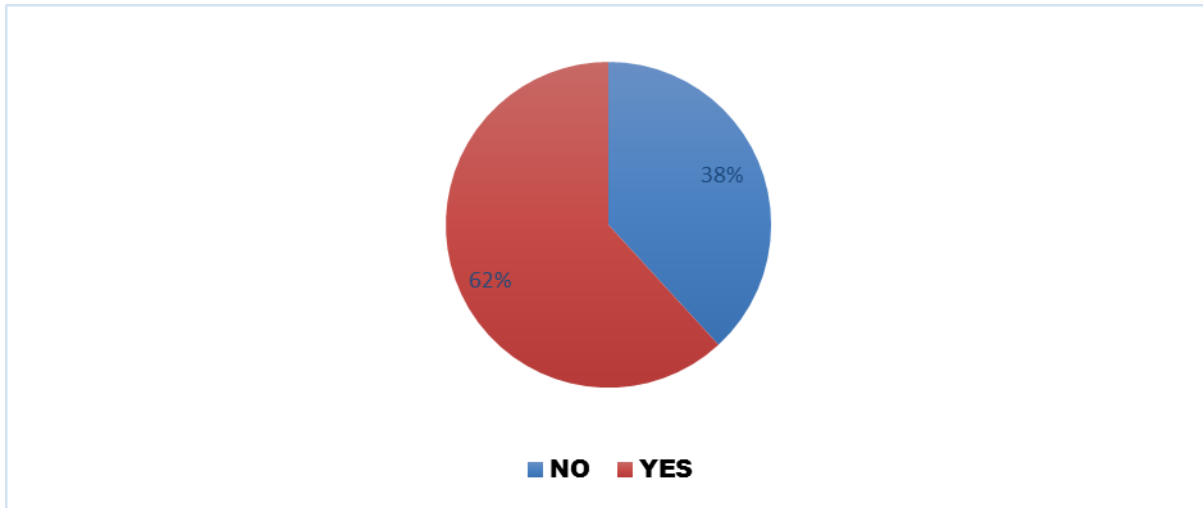


Figure 11: Do you know of any international convention that deals with climate change or climate change?

Source: Created by the author (2023)

### **Do You Know of Any National/Local Convention That Deals With Climate Change or Climate Change?**

Finally, the researchers wanted to determine whether the respondents were aware of South African and international laws that can be implemented in dealing with climate change and its impacts. Figure 11 highlights that 63% of the participants did not know a South African law that deals with climate change or climate change, while 37% claimed that they knew of a South African law that deals with climate change or climate change. This finding is astonishing given that more university students in the previous question (62%) knew about an international convention that deals with climate change or climate change. This means that almost the same number of South African public university students who claimed to know about international conventions that deal with climate change or climate change did not know any South African law that deals with climate change or climate change. The fact that most students at a public university do not know about their country's climate change legal framework could indicate that the media tends to focus more on international conventions than South African laws. Saroar and Routray (2010) indicate that access to information is crucial because it determines individuals' knowledge of climate change, which eventually influences their behaviour. The literature has also shown that people who read newspapers or other related print media, listen to the radio, watch television, or have access to the Internet are more likely to be familiar with climate change than those who do not have access to such media or information. This discrepancy could pose a severe challenge in the fight against climate change because people might find it difficult to support the government if they do not know what the government intends to do about climate change, nor know what is allowed by the law of the country or not. The discrepancy might also indicate that the South African media tends to focus on international conventions rather than South African laws that deal with climate change or climate change or that some of the students who participated in this research do not have access to these media outlets. Figure 11 illustrates the responses to the question: "Do you know of any South African law that deals with climate change or climate change?"

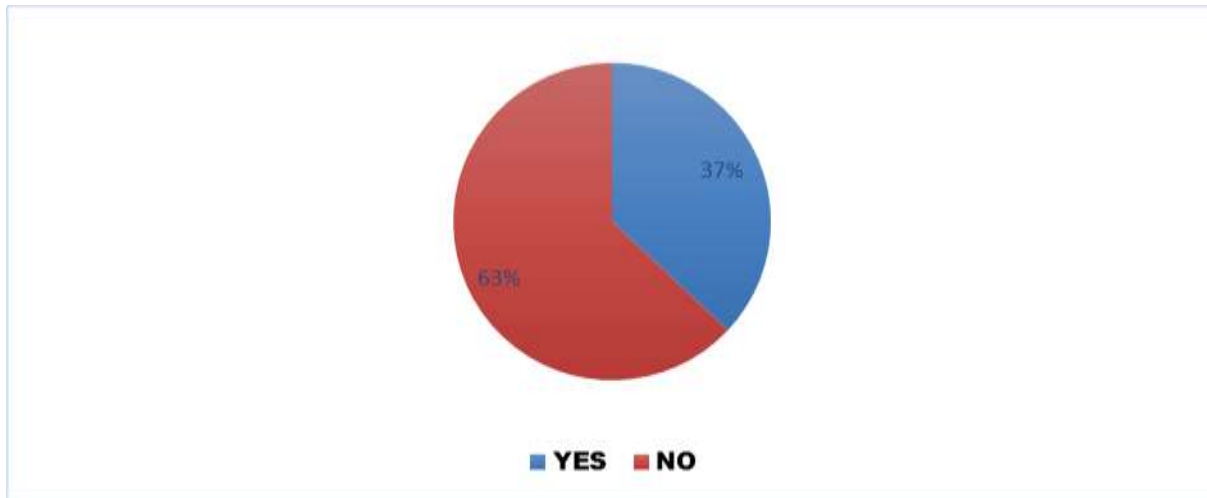


Figure 11: Knowledge about local and international laws dealing with climate change  
Source: Created by the author (2023)

### ***Conclusion and Recommendations***

This study aimed to explore climate change awareness among students at a South African public university. This research was deemed necessary because university students are likely to be the ones who inherit the responsibility for combatting climate change and its impact, locally and globally, in the future. The findings of this research demonstrate that most of the respondents (84%) knew and believed that climate change is not a myth and that it is indeed happening in our time. 94% of the respondents thought that climate change is happening right now. The fact that the future generations know and believe that climate change is a problem facing current generations is a good start for finding the solution to the problem. These findings align with and confirm the finding in the literature, which shows that climate change is a real problem affecting the world in our lifetime.

However, it is worrying that some still do not believe climate change is happening. As discovered in this research, "6% of the respondents were not sure if climate change is happening, while 15% of the seven respondents indicated that they were extremely sure that climate change is not happening, while 46% of the seven respondents stated that were very sure that climate change is not happening. This finding suggests the need for increased efforts in raising climate change alarms. It also suggests the need for continued and improved efforts in awareness campaigns.

The above finding is happening in the context in which this research shows that about 94% of the respondents have experienced the effects of climate change to different degrees. As demonstrated in this research, there is almost a consensus among the respondents (approximately 96%) that humans and their activities are primarily to blame for causing climate change and therefore are responsible for the effects of climate change we are facing. The study recommends that climate change combatting strategies be part and parcel of general socioeconomic development programmes, wherein people will participate and be willing to do something about combatting climate change if these strategies are intertwined.

However, the findings in this research are, to a certain extent, also encouraging in the sense that 91% of the respondents (including those who do not believe it is happening) have, to a limited or greater extent, thought about climate change and its impact. It is also encouraging to find that about 75% of the respondents who did not believe climate change is happening were willing to change if they were made aware of it (i.e. if they were given more information and facts about climate change and its impact). The

findings in this research show that people are willing to learn and make informed decisions (evidence-based decisions) if given the facts.

Another encouraging finding of this study is that the majority (i.e., 83%) of the respondents knew what to do to combat climate change. This finding correlates well with the finding that 94% of the respondents regarding Question 1, also believed climate change is happening. Thus, those who believe climate change is happening know how to combat it and its harmful effects.

However, the most significant concern based on the findings of this research is that while many respondents stated to know what to do to combat climate change, many of them (+ 81%) confirmed to be unwilling to do anything about climate change. That is, they know that climate change is affecting people and the planet negatively; they know how to stop it but are unwilling to do what they know could assist in combating climate change and its harmful effects. They are unwilling to do anything, even though most respondents (63%) know about local/national and international laws that govern climate change efforts at national and global levels. These findings suggest a call for intensifying climate change awareness among South African university students across all media outlets. It is this knowing the problem and having the solution to the problem but being unwilling to implement the solution in order to solve the problem or minimise its harmful impact that explains why climate change has been a significant problem and will remain a severe problem to humanity and the earth in the future. The study recommends that future studies determine what causes people to behave in a way that is contrary to the norm. There is also a need to determine intergenerational differences in awareness of climate change and the consequences of climate change effects in South Africa.

## References

- Al Yousuf, B. 2016. *The Power of Education in Promoting Climate Change Awareness*. Available at:<http://gulfnews.com/opinion/thinkers/the-power-of-education>  
in<http://gulfnews.com/opinion/thinkers/the-power-of-education-in-promoting-climate-change-awareness> (assessedpromoting-climate-change-awareness. (Accessed: 20 January 2023).
- Burns, N. and Grove, S.K. 1993. *The Practice of Nursing Research: Conduct, Critique and Utilization*. 2<sup>nd</sup> ed. Philadelphia: Saunders.
- Burns, S.N. and Grove, S.K. 2003. *Understanding Nursing Research*. 3<sup>rd</sup> ed. Philadelphia: Saunders.
- Chilunjika, A. and Uwizeyimana, D.E. 2015. Contextualising climate change: Theoretical considerations. *Administratio Publica*. 8(4):202-229.
- Department of Environmental Affairs (DEA). 2012. *Second South African Environment Outlook: A Report on the State of the Environment – Executive Summary*. Available at:[http://soer.environment.gov.za/State\\_of\\_the\\_Environment.html](http://soer.environment.gov.za/State_of_the_Environment.html). (Accessed: 25 November 2022).
- Emetu, R.I. 2007. *The Impact of Law on Threats of Climate Change and Global Warming in Nigeria*. Master's Thesis. Benin City: University of Benin.
- Geuna, A. and Muscio, A. 2009. The governance of university knowledge transfer. *Minerva*. 47:93-114.
- Intergovernmental Panel on Climate Change (IPCC). 1996. *Climate Change 1995: The Science of Climate Change*. Cambridge: Cambridge University Press.
- Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Science Basis*. Available at: [http://www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/spmssp-human-and.html](http://www.ipcc.ch/publications_and_data/ar4/wg1/en/spmssp-human-and.html). (Accessed: 27 August 2012).

- Karl, T.R. and Trenberth, K.E. 2003. Modern global climate change. *Science*. 302(5651):1719-1723.
- Leiserowitz, A. and Smith, N. 2010a. *Knowledge of Climate Change Across Global Warming's Six Americas*. New Haven: Yale Project on Climate Change Communication. Available at: [http://environment.yale.edu/climate-communication/files/Knowledge\\_Across\\_Six\\_Americas.pdf?&session-id=ff6fc6bc5bc40ff3ab90bb\\_1a8\\_bcb14a9](http://environment.yale.edu/climate-communication/files/Knowledge_Across_Six_Americas.pdf?&session-id=ff6fc6bc5bc40ff3ab90bb_1a8_bcb14a9). (Accessed: 08 June 2021).
- Leiserowitz, A. and Smith, N. 2010b. *Climate Change in the American Mind: Americans' Global Warming Beliefs and Attitudes in January 2010*. Fairfax: Center for Climate Change Communication, George Mason University. Available at: <http://e360.yale.edu/images/digest/AmericansGlobalWarmingBeliefs2010.pdf>. (Accessed: 27 August 2022).
- Saroar, M.M. and Routray, J.K. 2010. In situ adaptation against sea level rise (SLR) in Bangladesh: Does awareness matter? *International Journal of Climate Change Strategies and Management*. 2(3):321-345.
- Narksompong, J. and Limjirakan, S. 2015. Youth Participation in Climate Change for Sustainable Development. Available at: [http://cisdl.org/public/docs/NARKSOM\\_PONG.pdf](http://cisdl.org/public/docs/NARKSOM_PONG.pdf). (Accessed: 08 January 2023).
- Swilling, M. and Annecke, E. 2012. *Just Transitions: Explorations of Sustainability in an Unfair World*. Cape Town and Tokyo: UCT Press & United Nations University Press.
- Tinarwo, J. 2020. Effectiveness of the Food and Nutrition Security Policy in Masvingo, Zimbabwe. PhD Thesis. Johannesburg: University of Johannesburg.
- Union of Concerned Scientists. 2009. *Global Warming FAQ*. Available at: [http://www.ucsusa.org/global\\_warming/science\\_and\\_impacts/science/global-warming-faq.html](http://www.ucsusa.org/global_warming/science_and_impacts/science/global-warming-faq.html). (Accessed: 27 August 2022).
- United Nations (UN). 1994. *United Nations Convention to Combat Desertification*. Available at: <http://www.unccd.int/Lists/SiteDocumentLibrary/conventionText/conv-eng.pdf>. (Accessed: 25 August 2022).
- Whitmarsh, L. 2008. Are flood victims more concerned about climate change than other people? The role of direct experience in risk perception and behavioural response. *Journal of Risk Research*. 11:351-374.
- Wilson, I. E. 2011. Perceptions of Climate and Environmental Change in Northcentral Kansas. PhD Thesis. Manhattan: Kansas State University.
- World Watch Institute. 2006. *Indonesian Tsunami Kills Hundreds as No Warnings Given*. Available at: <http://www.worldwatch.org/node/4428>. (Accessed: 10 September 2022).

## Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).