

Conference Paper

Awareness of Climate Change Among University Students: A Case Study at FPT University

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ORCIDTrong Luan Nguyen: <https://orcid.org/0000-0002-3489-1628>**Abstract.**

This study aims to analyze and evaluate students' perceptions of climate change in Vietnam today, through various communication methods such as social networks, newspapers, educational programs. This study is based on a survey taken by 460 university students. Quantitative analysis was conducted using frequency statistics, Cronbach's Alpha and EFA. The results show that there are significant differences between students when there are two opposing opinions: climate change can be overcome in the future and climate change is unlikely to be overcome in the future. Students draw conclusions through their own understanding of climate change. After conducting the research as well as after consulting and analyzing quantitative data, along with collecting and surveying students' opinions, we were able to come up with methods to improve our actions. Students in particular, and people in general, lack awareness on environmental protection, especially in terms of the improvement of educational programs and promotion of propaganda about environmental protection consciousness. Young people represent the future generation of knowledge that influences the development of the national environment.

Keywords: climate change, perception, environment management, consciousness

1. INTRODUCTION

Humans are all facing many difficult global problems such as global warming, rapid melting of bipolar ice, and rising sea levels which have had a great impact on our daily lives and the economic development of many countries (Hansen et al., 2015). In recent years, many countries have realized this danger and started to have plans and solutions to deal with it (Lau, L. C. et al., 2012). Students' knowledge, attitudes, behaviors, and abilities to solve environmental problems are represented by their environmental awareness (Aliman et al., 2019). In Vietnam, young people, especially students, have become increasingly aware of their role in facing this problem in recent years (Ozer, P., 2012). The generation of Vietnamese students, with the knowledge gained from

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teachers as well as through updating news or researching articles inside and abroad, have partly realized that this natural threat comes from their ignorance and indifference towards the environment (Gobin, A. et al., 2012). However, a large number of young people are still not aware of the importance of climate change, they still maintain a negative way of life and increasingly make the environment worse (Selm, K. R. et al., 2019). Therefore, it is necessary now to make Vietnamese youth and students aware of their role in contributing to climate change reduction (Kieu, T. K. et al., 2016). In recent years, universities have also paid attention to this issue and communicated to students so that they realize their responsibilities and what they can do (Gibbs,

G. et al., 2005). This common issue needs the cooperation and cooperation of everyone and young people will always be the pioneer generation in mitigating climate change (Change et al., 2006). Our research with the topic "Factors affecting students' awareness about climate change: The case study of FPT University, Vietnam". The first is to refer to some related literature and recent studies. Then, we present research methods and collect data, and finally analyze and discuss the problem as well as draw conclusions and propose some solutions for students to contribute to minimizing climate change. The purpose of this study is to identify the factors that affect the perception of climate change among FPT University students. Through a mixed research method based on a survey of 260 students in many specialties, of different ages and genders with a hypothetical model, there are factors affecting awareness of climate change. Through the analyzing process, we can affirm the factors affecting the perception of climate change of FPT university students. The article also suggested some possible solutions to raise awareness about climate change among students in the current period. Research objectives will focus on (1) presenting the theoretical basis related to the perception of climate change among FPT university students; (2) assess the current reality of awareness of FPT University students about climate change; (3) analysis of factors affecting the perception of climate change among FPT university students and (4) propose a number of ways to raise awareness about climate change.

2. LITERATURE REVIEW

2.1. Climate change

Climate change is acknowledged as a global issue, with increases in temperature, changes in rainfall patterns, sea-level rise, salt-water intrusion, and a higher likelihood of extreme weather events such as flooding and droughts (Bates et al., 2008). Climate

change is a word that refers to a shift in the earth's climate driven primarily by human-induced changes in the composition of the atmosphere. Climate change occurs as a result of this change in combination with natural changing variables. In a nutshell, climate change is the current and future transition of the climate system from the biosphere, atmosphere, and hydrosphere to the lithosphere. Many research has proven temperature changes and changes in precipitation patterns, proving that climate change is a reality (Burić, Ducić, & Mihajlović, 2018; Mahmoudi, Mohammadi, & Daneshmand, 2019; Ruml et al., 2017). Most people agree that climate change is true (Steg, 2018), furthermore, it was discovered that a consistent increase in air temperature and a decrease in precipitation during the study period have a substantial impact on the likelihood of fire (Živanović, Ivanović, Nikolić, Đokić, & Tošić, 2020).

2.2. Impacts of climate change

Climate change is a critical topic in the twenty-first century (Martin, 2006; Cohen and Waddell, 2009). The most important threat humanity faces in the twenty-first century is climate change, which includes present global warming and sea-level rise. Climate change is a critical challenge and has a direct impact on the Sustainable Development Goals (IPCC, 2007). Greenhouse gas emissions, which result in the warming of the atmosphere, are the primary cause of global climate change. From 1880 to 2012, the global average land and ocean temperature climbed by 0.95 degrees Celsius (Hansen, Ruedy, Sato & Lo, 2010). In the tropics, climate models project a 1–2 °C increase in temperature by 2050, whereas rainfall increases are less clear (Loarie et al., 2009). The increase in global temperature due to anthropogenic effects and greenhouse gas emissions is exacerbating the situation in many locations, increasing the risk of droughts occurring or intensifying (Cook, Smerdon, Seager, & Coats, 2014).

Climate change is clearly caused by human activities. The current world population's living conditions are already being disrupted by the worldwide rise in temperature, as well as the increase in its fluctuation. This manifests itself in a variety of ways, including decreased health, an increase in respiratory disorders, and an increase in infectious diseases (Watts et al., 2018); poorer safety from extreme weather events, diminished ecosystem services, and a greater influence on storm buffers (Nelson et al., 2013). Furthermore, the effects of climate change are not evenly dispersed. However, what exacerbates the climate crisis is almost unrelated to the distribution of greenhouse gas emissions that are to blame (Shue, 1993 & 2015).

Natural catastrophes have detrimental consequences for communities, and they are becoming more frequent and intense (Cvetković & Dragicević, 2014; Öcal, 2021;

Semenza et al., 2008; Shi, Visschers, & Siegrist, 2015; Yu, Wang, Zhang, Wang, & Wei, 2013). Floods, severe storms, earthquakes, and droughts have lower mortality rates than sociopolitical events like armed wars, but they nonetheless happen more frequently and harm a larger proportion of the population (Hunter, 2017; Fujita & Shaw, 2019). There have been serious debates and discussions about the existence of climate change impact on the occurrence and destructive effect of increasingly common natural disasters (Banholzer, Kossin, & Donner, 2014; Bouwer, 2011; Davies, Oswald, & Mitchell, 2009; Fujita & Shaw, 2019; Mano, Kirshcenbaum, & Rapaport, 2019; O'Brien et al., 2006).

2.3. Climate change in Vietnam

Some of the impacts of climate change include rising sea levels, destruction of ecosystems, loss of biodiversity, diseases, droughts, floods, economic damage, war, and conflict. In comparison to affluent countries, the negative repercussions of these shifts are expected to be felt more strongly in the developing world. Because a major portion of the population lives in vulnerable areas and relies solely on natural resources for survival, this country's institutional capacity to take preventive steps is restricted (Adger, 1999).

Vietnam is one of the five countries in the world most affected by climate change, according to the Ministry of Natural Resources and Environment (2012). Various uncommon and terrible natural catastrophes struck Vietnam in 2020, affecting many regions. There have been 16 natural catastrophes since the beginning of that year, including 13 storms in the East Sea and 264 thunderstorms, whirlwinds, and heavy rain in 49 provinces and cities. The worst rains on record fell from October 6 to 22, wreaking havoc over the Central region, particularly in the provinces of Ha Tinh and Thua Thien Hue. Historical floods, flash floods, and landslides wreaked havoc on the central region, killing 249 people and leaving 1,531 houses collapsed; 239,341 houses damaged, roof lifts; 473,449 turns of houses flooded; and many works for natural disaster prevention and control, infrastructure, and people's lives were harmed or destroyed. Over 36 trillion VND is believed to have been lost in economic terms.

The Mekong Delta is frequently subjected to saltwater intrusion and soil degradation as a result of climate change, resulting in droughts and freshwater shortages that have a negative impact on the economy and people's livelihoods. Many rice fields, fruit trees, and irrigation systems have been harmed. The soil structure is harmed by salt water, which reduces the ability of plants to grow. If the sea level rises by 75 cm, the Mekong Delta will be submerged in 19% of its area. If the sea level rises by one meter by 2100, nearly 38 percent of the Mekong Delta area, nearly 35 percent of the population

in Mekong Delta provinces, over 4% of the railway system, over 9% of the national highway system, and about 9% of the national highway system and 12% of Vietnam's provincial road system will be flooded. According to the United Nations, by 2015, over 135,000 households in Vietnam will have to be relocated due to environmental concerns. Up to 1 million people could be displaced in the Mekong Delta by 2050 as a result of recurring floods and droughts. According to the National Center for Hydro-Meteorological Forecasting (2009), the salt-water intrusion has reached practically the entire area of the Mekong river event, with salt-water intrusion reaching 70 kilometers in some provinces with a 13-30 percent intensity.

2.4. Perception of climate change

Climate change is viewed by the majority of the public as a critical concern for humanity, although it is significantly less important in their daily life. Furthermore, after a firsthand encounter with the repercussions of climate change in the form of extreme weather conditions, this perception of the situation alters, increasing the desire to assist in solving the problem (Capstick et al., 2015). Climate change is a natural phenomenon that is exacerbated by anthropogenic influences, such as greenhouse gas emissions, which exacerbate the negative effects of climate change on the functioning of human communities (AghaKouchak et al., 2020; Hoogendoorn, Sütterlin, & Siegrist, 2020; Hussain et al., 2020). Climate change-induced intense and deadly natural catastrophes erode community resilience (Cvetković, Nikolić, Nenadić, Öcal, & Zečević, 2020; Cvetković, Öcal, & Ivanov, 2019). Besides that, climate change is nothing new for scientists, according to Adamo, Al- Ansari, and Sissakian (2020), because geological evidence demonstrates that the climate system has had periods of stability and variability throughout the planet's history. In the last ten millennia, global climatic conditions have generated favorable and ideal conditions for the development and expansion of both humans and flora and animals (Arora et al., 2018).

Many research has looked into how people feel about climate change (Clayton et al., 2015; Hornsey, Harris, Bain, & Fielding, 2016; Weber, 2016). However, the types of climate change beliefs that these research measured and how they analyzed them differ substantially (Motta, Chapman, Stecula, & Haglin, 2019). Climate change perceptions and their impact on the frequency and severity of natural disasters have a big impact on how climate policies are implemented, how educational programs are designed, and how preventive measures are taken (Allan et al., 2020; Cuthbertson, Rodriguez-Llanes, Robertson, & Archer, 2019; Seara, Pollnac, & Jakubowski, 2020; Ruiz, Faria, & Neumann, 2020). After the electronic media, educational institutions are the most

prevalent manner of communicating about the security dangers of climate change, according to Cvetković, Tomašević, and Milašinović (2019). Chou (2013) found that there is a lack of public trust in the government's ability to combat climate change and that the public has called for better risk coordination, transparency, and participation in climate change policy-making. Echavarren, Balžekienė, and Telešienė (2019) discovered that political governmental situations do not explain variation in climate change concern and that education and political choice are important mediators. Ruiz et al. (2020) determined that cultural exchanges of values and ideas, as well as the direct impact of climate change, have a direct impact on attitudes. Furthermore, they determined that implicit factors are linked to the degree of community expansion and the spread of climate change information. Climate change perceptions influence whether people support climate policy and act to mitigate and/or adapt to it (Brügger, Morton, & Dessai, 2015; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007). Thousands of students from over 100 nations walked out of school on March 15, 2019, to urge that their

governments take action to avert severe climate change. These requests were specifically tied to the reality that failure to address climate change will have a greater impact on their generation (Warren, 2019). Many scientists and academics supported their actions and demands (Hagedorn et al., 2019). The September strike, in particular, went beyond adolescent voices to engage a broader public audience (Thunberg, 2019). These young people have expressed concern that they will experience ongoing and growing issues as a result of climate change, and that their future lives will be impacted. Their continued actions have the potential to affect public opinion, which could influence future climate change policy directions (Capstick et al., 2015). Therefore, efforts are needed to foster community attitudes and behavior, especially school students because environmental attitudes and behaviors can be developed if driven by feelings that are already related to the environment (Nazarenko & Kolesnik, 2018)

3. METHODOLOGY

3.1. Participation

The respondent group includes 260 students from FPT University, Vietnam who are mostly from the provinces of the Red River Delta. The sample consisted of 53% female, 45% male, and 2% of another gender. These students range from class 14 to class 17, which equates to an average age of 18-22 years old. The three main disciplines that we put into research are economics, languages, and information technology. We contacted the students through the school's email system thanks to the support of the

faculty. Because it is impossible to be certain how many students in each class did not respond to the questionnaire, this sample is considered a convenience sample. The students participated in the study by answering online questionnaires in the classroom. The data collection is completely anonymous. All students participating voluntarily want to support this project, so they may decline to participate. The average time to respond to the questionnaire was 5 minutes. We collected the above sample number within 4 days, starting on June 6 and ending on June 9, 2022.

3.2. Sample description

To begin measuring students' baseline perceptions of climate change, respondents were asked to answer whether they had ever heard of the change. The result is not surprising when no one chooses "Never heard of". Next, if they have heard, through which of the following sources of information. There are 5 answers given: "Heard from news, and press", "Heard from social networks", "Heard from propaganda campaigns for the environment", "Heard about it" from educational activities", and "Heard from other sources". To make a deeper measure of students' awareness of climate change, we used a 5-level Likert scale to conduct the survey. Each response is rated on a scale of 1 to 5: (1) Totally disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Totally agree.

Students' opinions on issues related to climate change were measured by 6 issues: "A change in the local weather cycle is an issue that is directly related to climate change", "Ozone depletion is a problem directly related to climate change", "Sea level rise, inundation, frequent floods are problems directly related to climate change", "Hot Globally, melting of polar ice is a problem directly related to climate change", "Natural wildfires are a problem directly related to climate change", "Acid rain is issued that are directly related to climate change". In addition to the issues we raised, the students raised other issues such as general environmental pollution, loss of biodiversity, earthquakes, tsunamis, epidemics, and the extinction of many species of organisms due to environmental changes.

We have given the causes of climate change to assess students' perceptions, including: (1) "Air pollution due to greenhouse gas emissions is one of the causes of climate change", (2) "Overexploitation of forests is one of the causes of climate change", (3) "Residues of nitrogen oxides in fertilizers are one of the causes of climate change", (4) "The increase in IR radiation remaining in the atmosphere is one of the causes of climate change",

(5) "The amount of methane from landfills is one of the causes of climate change", (6) "Consumption of milk and dairy products (or similar products) which produces many

greenhouse gases is one of the causes of climate change”, (7) ”The use of fossil fuels (coal, oil, etc.) is one of the causes of climate change”. When asked which cause is the most important in causing climate change among the above seven causes, the (1) cause is chosen the most (accounting for 42%), and the lowest in the (6) cause with only approx 4%.

Students gain knowledge about measures to limit climate change by completing the following statements: ”Restricting, reducing fossil fuel use can contribute to limiting the use of fossil fuels. climate change”, ”Strengthening projects using green energy such as solar energy, wind energy can contribute to limiting climate change”, ”Controlling the level of emissions into the environment can contribute to limiting climate change”, ”Controlling the level of wastewater entering the environment can contribute to limiting climate change”, ”Increasing the use of public transport (buses, etc.) can help limit climate change”, ”Increasing use of bicycles or walking can help limit climate change”, ”Preference should be given to environmentally friendly products (with short decomposition time, recyclable, ...) that can contribute to limiting climate change”, ”Limit the use of products that are not environmentally friendly (have a long decomposition time, production emits many pollutants, ...) can contribute to limiting climate change”, ”Avoiding food waste can also contribute to limiting climate change”, ”Applying vegetarian and vegan diets can also contribute to limiting climate change”. In addition to the above-mentioned measures, the respondents also mentioned useful measures such as saving electricity and water, implementing family planning, actively planting many trees, and carrying out penalties for indiscriminate waste streams from households. In this section, we also collected students’ opinions on whether climate change can be controlled and remedied in the future. The results responded that about 63% chose ”I think climate change can be overcome in the future”, while the remaining 37% chose ”I think it is very difficult to fix this problem”.

For the group of respondents who selected the issue of climate change to be tackled in the future, we further asked them to complete the following statements: ”I can do my part to limit climate change myself, so I believe that by working together, this problem can be overcome”, ”More and more environmental organizations, I believe they can overcome this situation”, ”The awareness of people about this problem is increasing day by day through many different channels, so sooner or later this problem will be fixed”, ”The Paris Agreement on climate change gives me confidence that changing climate change will be overcome”, ”Science and technology are developing more and more, we will soon find a solution to overcome”. Similarly, for the group of respondents who chose that climate change will be remedied in the future, we mentioned the following statements: ”Climate change is an inevitable process that occurs when human influences

excessive impact on nature”, “Climate change is not a very important issue and should be given priority over other issues”, “Fossil fuels are still the main fuel source in the world and almost cannot change this situation”, “In fact, efforts to control climate change (pollution control policies and regulations) do not bring too much effect”.

4. RESULT & DISCUSSION

4.1. Sources of cognitive information

According to the survey, 100% of students are aware of climate change. Through the collected statistics, there is a clear division through main sources including social networks (76.9%), news - newspapers (75.4%), from educational activities (68.5%), through propaganda campaigns for the environment (56.9%) and 35.4% came from other information sources (Figure 1). It shows that most students are aware of climate change through social networks. Another study pointed that 98.3 percent of respondents learned about climate change from social media, and 48.6 percent had conversations about it with people on their networks (Ogunjinmi et al., 2016). This shows that social networks and communication channels have the strongest impact on young people’s awareness of climate change for young people, especially students. Mainly because the 4.0 revolution has changed students’ living habits of information search and information collection. Moreover, social networks occupy most of the students’ time not only in study, work, and in life. Currently, almost any student owns a smart device (smartphone, tablet, laptop ...) so accessing the Internet and finding information is extremely fast nowadays. Not only that, in the school and outside the society, there are often projects for the environment, so most of the school’s students are no stranger to the big problem of today’s society - “climate change”.

In addition to the above issues, the survey results also received some answers on other issues that also affect climate change such as epidemics, natural disasters, deforestation, increasing number of motorbikes, acid rain. and industrial emissions. Causes of climate change

The survey results received a lot of objective answers about the causes of climate change. Specifically, about 66.7% of respondents believe that overexploitation and use of forests is the main cause of climate change. Next, about 55.4% said that climate change is the result of excessive use of fossil fuel sources and 54.8% said that the amount of methane from landfills after burning affects the soil and air environment, thereby causing global climate change. Nitrogen residues in fertilizers and IR radiation

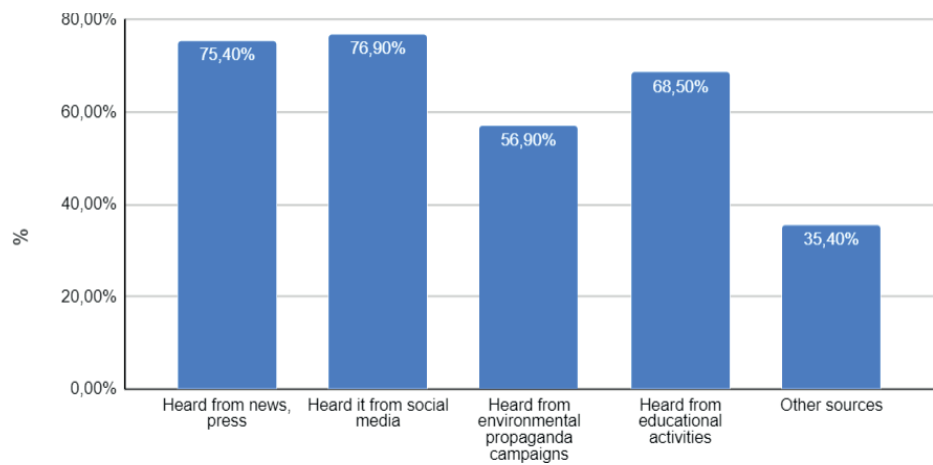


Figure 1: Student resource on climate change.

also contribute to climate change. Overall, the results show that (41.5%) of the opinion that greenhouse gas emissions are the main cause of climate change (Figure 2)

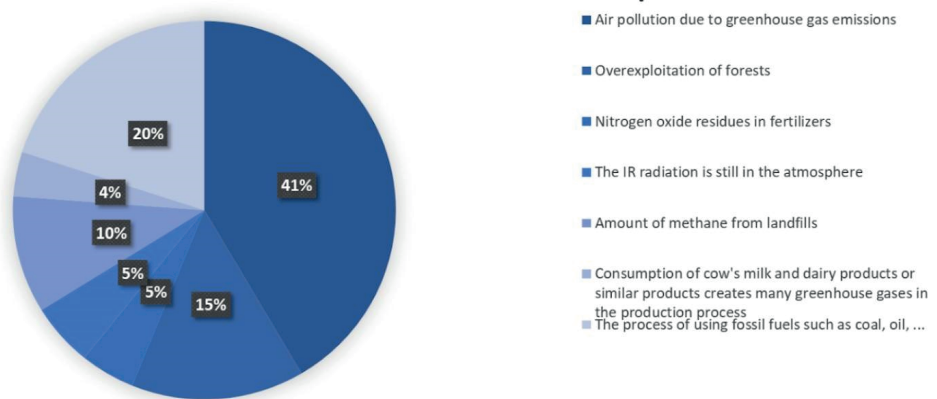


Figure 2: The main cause of climate change.

In addition to the reasons mentioned above, we also received responses saying that there are other causes that also have an impact on climate change such as indiscriminate littering, pesticide and insecticide bottles and bottles. If grass is not handled properly, industrialization also causes climate change.

However, there are also some conflicting opinions that climate change does not come from the above causes. First, "Air pollution due to greenhouse gas emissions is one of the causes of climate change". According to recent studies also confirmed that anthropogenic influences on global warming are becoming more important. Greenhouse gases in the lower atmosphere of Earth are one of the main causes of global climate change (Mugambiwa.,2021).; Supriyanto.,2017). However, some students disagreed about the causes of greenhouse gas emissions, saying that greenhouse gas

emissions have been significantly reduced in some areas where the use of petroleum is limited as the main energy source. There was a time when CFCs (one of the gases with a strong influence on greenhouse gas emissions) were "boycotted" from the human consumption market. Second, "Overexploitation of forests is one of the causes of climate change". A highly controversial issue about forest use and forest regeneration. Since there is afforestation to compensate for forest use, deforestation is not a major cause of climate change.

Third, "The increase in residual IR radiation in the atmosphere is one of the causes of climate change". Because, a part of students think that this is not necessarily a cause because the increased solar radiation in the atmosphere can come from changes in the Earth's crust and its movement around the Sun. As well as the thickness of the ozone layer has decreased significantly, which makes the Earth unable to protect its surface from the attack of solar radiation.

Fourth, "The amount of methane from landfills is one of the causes of climate change". Landfilling is no longer the only way to deal with garbage in many places. Currently, waste sorting and recycling are the trends of many people's lives. Especially, students have a lot of contact with programs for the community. They may think that reducing waste is already reducing the amount of methane.

Finally, "The process of using fossil fuel sources (coal, oil, etc.) is one of the causes of climate change". According to information sources that students update from advanced countries or some areas where the criteria for limiting the use of fossil materials are switched to the use of clean materials (wind, solar). So there has been some argument that limiting fossil use will reduce climate change. There are a few causes of climate change that are not considered to be the main causes. The first is "Residues of nitrogen oxides in fertilizers are one of the causes of climate change" and the second is "Consumption of milk and dairy products (or similar products) creates The production of many greenhouse gases is one of the causes of climate change. According to the survey and study from the students, the reasons why they did not choose the issues were: Firstly, some students did not know well about how nitrous oxide is harmful to the environment; Second, they don't think milk will cause the greenhouse effect. The root cause of this problem must be mentioned that milk - is one of the major food sources that people use regularly, and dairy manufacturers will not promote the "drinking of milk causes the greenhouse effect" to reduce their revenue. And fertilizer is a product they are less interested in, especially because urban students have very little exposure to fertilizer in rural areas and they are hardly regularly updated on this issue even online, in media or in society.

4.2. Measures to mitigate climate change

From the collected survey results, we see that climate change is a big and global problem but can still be improved by taking some positive measures. Specifically, about 70.8% of respondents believe that climate change will be improved through the use of green and clean energy sources to replace fossil fuels and fuels. Besides, about 63.1% said that good control of wastewater also contributes to mitigating climate change. In addition, 62.3% of the respondents also said that the use of environmentally friendly green food also contributes to mitigating climate change. In addition to the above solutions, we also received a number of other solutions proposed by the students such as maintaining public hygiene, family planning, or saving electricity that also contribute to reducing the risk of climate change. climate change.

4.3. Two opposing views

Out of 260 questionnaires sent out, we found two opposing views, some students believed that climate change could be improved in the future while others disagreed. agreement on this issue. Specifically, 63.1% of students said that climate change can be overcome and the remaining 36.9% think that climate change is unlikely to be overcome in the future (Figure 3). This result shows that students in particular and young people in general hope that climate change can be overcome in the future. They all realize that the Earth is having profound changes in climate, as evidenced by unusual phenomena that frequently occur around their own habitat. 63.4% of the total said that they themselves can contribute to climate change mitigation if they try their best. Others (61%) believe that a lot of climate and environmental organizations have already been established and that they will be able to do something about it. The rest (53.7%) are optimistic because the development of science and technology will have positive effects.

However, a large number of students in particular and young people think that this problem is global and can hardly be overcome due to indifference to nature and lack of personal knowledge, some still dispassionately think that this problem will be able to be overcome naturally without human intervention. Specifically, 60.4% think that this is an inevitable process and we can't do anything else. 50% of respondents also said that climate and environmental organizations were established and many campaigns were conducted but did not bring many positive signs. 27.1% of the respondents said that other issues should be prioritized and climate change can be overcome over time.

Note:

1. Red: I think climate change can be overcome in the future

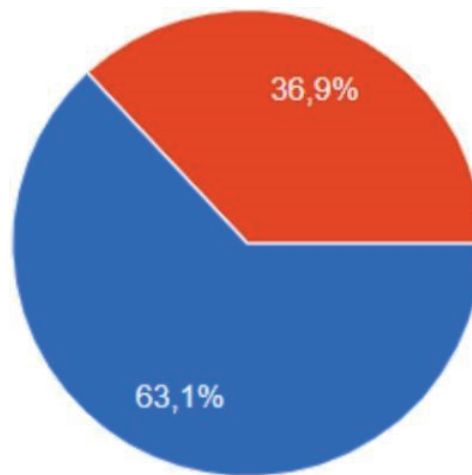


Figure 3: Students' opinions on future climate change.

2. Blue: I think climate change is unlikely to be overcome in the future

In general, though, we are all becoming increasingly aware of climate change and our responsibility in contributing to climate change mitigation. The point is to raise the awareness of people, and especially the generation of students, who must always be optimistic, the pioneer generation in contributing to climate change mitigation.

After having the results of descriptive statistics and frequency statistics of the independent and dependent variables, we move to quantitative analysis. First, the article uses the reliability analysis method of the scale (Cronbach Alpha) to make sure the variables are reliable and convincing for the study.

4.4. Statistics of baseline correlations between gender, major, and perception of the future of climate change

The following are some statistics to find out the basic interaction between gender and subject group of students on their perception of whether climate change can be remedied in the future.

The first is statistics with the dominant factor being gender. Through the survey results, there are 118 male respondents, accounting for 45.4%, 138 female students, accounting for 53.1%, and 4 respondents who did not disclose their gender accounting for 1.5%.

Among the 118 male respondents participating in the survey, there are differences in perception as follows: There are 76 male students who think that climate change can be overcome in the future, accounting for 64.4% of the male students who responded. In addition, there are 42 male students who think it is difficult to overcome climate change, accounting for 35.6% of male students.

For females, there are 86 students who think that climate change can be overcome in the future, accounting for 62.3% of female students. And there are 52 female students who think it is very difficult to overcome climate change, accounting for 37.7% of female respondents.

Thus, in terms of gender, we can see that male students are slightly more optimistic than female students when it comes to the perception of the future of climate change by comparing % of respondents who think that climate change can be overcome in the future (64.4% of boys and 62.3% of girls). Next is statistics with the academic major as the dominant factor. There were 72 students from the Information Technology sector participating in the survey, accounting for 27.7%. Of these, 30 students think that it is difficult to overcome climate change, accounting for 41.7%, and 42 students think that climate change can be overcome in the future, accounting for 58.3%.

Regarding the Language major, there are 64 students in this field who participated in the survey, accounting for 24.6%. Of which, 20 students think that climate change is difficult to overcome, accounting for 31.3%, and the remaining 44 students think that climate change can be overcome in the future, accounting for 68.8%.

The remaining 124 students from the Economics major took part in the survey, accounting for 47.7%. There are 23 students, who think that it is difficult to overcome climate change, accounting for 37.1%. And there are 39 students who think that climate change can be overcome in the future, accounting for 62.9%.

Thus, through the above data, it can be seen that students of the Language major have the most optimistic perception of the future of climate change among the three survey sectors. It was followed by Economics with 62.9% of students thinking that climate change can be overcome and finally Technology with 58.3%.

4.5. Analysis of Cronbach's Alpha

The study uses the Cronbach alpha analysis method to test the reliability of the scale of the components in the theoretical model and the correlation between the observed variables and the total variable displayed according to the results in Table 1. In which, the total variables in the model include: (1) Example - Issues related to climate change, (2) Agriculture - Causes of climate change, (3) BP - Measures to limit climate change processing, (4.1) DTL - About climate change will be overcome in the future, (4.2) KTL - About climate change difficult to overcome in the future.

The results of the Cronbach Alpha test in Table 1 show that the Cronbach's alpha coefficient of the scales ranges from 0.659 to 0.874, both higher than 0.6. This proves that the relationship between the observed variable and the total variable is reliable.

In addition, the correlation coefficient of each observed variable with the total variable reached a value greater than 0.3 (Nunnally and Burnstein, 1994), showing that the correlation of the component variable and the total variable is height and scale has high reliability.

TABLE 1: Cronbach's Alpha analysis results.

VARIABLE	CODE	CRONBACH'S ALPHA
Issues related to climate change	VD	0.806
Causes of climate change	NN	0.853
Measures to limit climate change	BP	0.874

4.6. Exploratory Factor Analysis (EFA)

The results after EFA analysis show that the scale has 3 factors and 24 variables that satisfy the above conditions. The selected load factor greater than 0.5 shows that the variables are really well-meaning. This shows the correlation relationship between the observed variable and the factor. The mean value of the Cronbach Alpha coefficient 0.844 ranges from 0.806 to 0.874 which reinforces the feasibility of the measurement. The KMO coefficient is 0.879, greater than 0.05 also shows that the analyzed factors are consistent with the input data. Bartlett's test of less than 0.05 shows that the observed variables are highly correlated. The total explained variance was 65.934%, which is 50% higher than the standard rate, indicating that the EFA model is appropriate. The eigenvalue is a commonly used criterion for determining the number of factors in an EFA analysis. With this criterion, the Eigenvalue of this study is 1.013, only the factors with Eigenvalue ≥ 1 are kept in the analytical model. All are shown in the Table 2. In general, the research model is suitable and satisfies the conditions.

TABLE 2: EFA analysis results.

Constructions	Number of Items	Cronbach Alpha	KMO	TVE	Eigenvalue
Issues related to climate change (VD)	6	0.806	0.879	65.934	1.013

TABLE 3

Causes of climate change (NN)	8	0.853		%	
Measures to limit climate change (BP)	10	0.874			

5. CONCLUSION & RECOMMENDATION

After conducting the research paper as well as referencing and analyzing quantitative data along with collecting and surveying to get students' opinions, we can come up with some very clear summaries. Firstly, the problem of climate change is caused by many different causes, these causes can come from Earth's activities or from humans. Humans have carried out a lot of industrial activities, exploitation and use to serve the life and development of society. Those actions have caused extremely heavy consequences for the environment and climate change, which has brought with it natural disasters such as forest fires, earthquakes, sea level rise, tsunamis, global warming or even widespread acid rain. Those dire consequences have alarmed humanity to be aware of its actions to contribute to climate change mitigation. Students are the generation of knowledge, the future of a country. We are equipped with a lot of human knowledge about the world and the environment, and each individual must be aware of the dangers of climate change. climate, thereby reminding yourself to be able to contribute to climate change mitigation.

Climate change poses serious dangers that affect not only an individual, a city, but also a country and region. If we cause harm to nature, nature will return the same thing to us. People should be aware of what is happening around them to promptly correct mistakes and gradually improve the problem. The students who are the main subject of this research have also proposed solutions and directions that they think humans can take to contribute to climate change mitigation such as limiting and reducing fossil fuels using, increase projects using green energy such as solar energy, wind energy, control the level of emissions into the environment, control the level of wastewater into the environment, increase the use of bicycles or walk and prioritize the use of environmentally friendly products. In addition, avoiding food waste or adopting vegetarian and vegan diets also brings positive consequences. In short, climate change is a common global problem, being aware of the dangers, causes and finding solutions to the problem is not only the role of students but also a common mission of all humankind.

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