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Public Opinion on Climate Change: A Comprehensive Survey Analysis

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Abstract

Climate change significantly impacts safety, health, and the workplace environment, primarily through rising temperatures and increased heat exposure. This research explored public opinion on climate change within the Fifth Congressional District of Cebu, Philippines, focusing on seven municipalities: Borbon, Sogod, Catmon, Carmen, Danao, Compostela, and Liloan. The research examined a possible discrepancy between residents' knowledge of climate change and their corresponding efforts to address it, aiming primarily to assess beliefs regarding climate change. The study used a survey questionnaire developed by Tarik

Abdel-Monem *et al.* to understand how residents perceive and respond to climate change and employ a four-point Likert Scale as a scoring procedure. The residents in District Five expressed high concern about climate change towards the family, which was all about human activity, specifically the burning of fossil fuels. The mitigating actions were turning off lights and appliances and using public transportation. This collective effort mitigates climate change effects where policy interventions and a close call to nature through organizational and government communications come in hand.

Keywords: Rising Temperature, Global Warming, Community Resilience, Environmental Behaviour

Introduction

Climate change is one of the most pressing issues facing the world today, with far-reaching impacts on the environment, economy, and society. The Intergovernmental Panel on Climate Change (IPCC) has highlighted the urgency of addressing climate change and its potential impacts on ecosystems, economies, and human well-being^[1]. Witnessing the effects of climate change firsthand would be a strong motivator to study public opinion on the issue. The researchers living in the fifth district saw the rising sea levels, changes in rainfall patterns, and more extreme weather events. These experiences spark curiosity about how others perceive the situation and what actions they believe are necessary in the district. By understanding public opinion, it helped bridge the gap between what people observe and the actions they take. This research could be crucial for developing effective climate change initiatives in the 5th district and beyond. As a result, understanding the opinion on climate change is essential for informing effective policy-making and communication strategies.

This research used a comprehensive survey analysis of seven municipalities within the Fifth Congressional District of Cebu, Philippines: Borbon, Sogod, Catmon, Carmen, Danao, Compostela, and Liloan.

The primary purpose of this study was to assess beliefs about climate change. The following sub-problems were also answered: Views about the description and understanding of climate change; level of concern to the family, community, nation, and other countries; and, lastly, actions to mitigate climate change. Through a combination of quantitative survey data, a comprehensive understanding is made to enhance comprehension and encourage increased awareness and engagement regarding this crucial issue.

Research Materials and Methods

Materials

Table 1: Materials used

Materials	Uses
Pen	Used in writing or answering the survey questionnaires.
Paper	Used for printing the survey questionnaires
Google Form	Used for online survey.

Methods

The study employed a systematic approach to gather and analyze public opinion on climate change in 400 responses from seven municipalities within the Fifth Congressional District of Cebu, Philippines: Borbon, Sogod, Catmon, Carmen, Danao, Compostela, and Liloan. A ready-made questionnaire or survey where climate change perceptions were measured consistently with the prior literature [2] and distributed both in physical locations and online. Initially, essential tools like pen, paper, and online survey forms were assembled to determine what data was needed and how it would be gathered. After the data was collected, it was transferred, cleaned, and sorted. The next phase involved a detailed analysis of the compiled data through graphs to draw conclusive insights. Finally, the information was interpreted to understand the experimental implications, providing a solid basis for analysis and assessment.

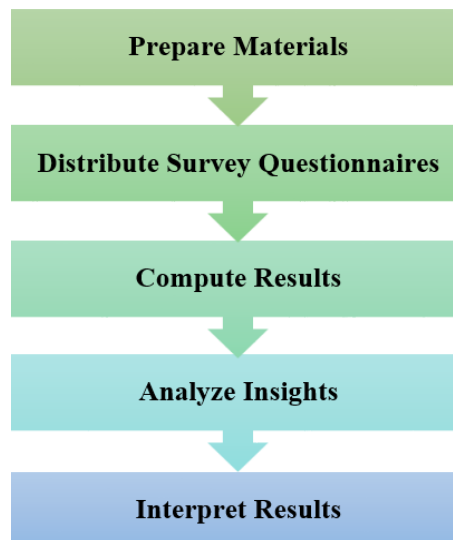


Fig 1: Process Overview

Scoring Procedure

A scoring procedure appraises the study’s methodological quality and served as a foundation for data analysis and interpretation. The aggregated weighted mean determines the level of concern and action to mitigate climate change among respondents.

Table 2: Scoring Procedure for the Level of Concern about Climate Change

Scale	Weighted Mean	Category	Description
4	3.25-4.00	Very Much Concerned	The respondents are deeply worried of the effects of climate change.
3	2.50-3.24	Very Concerned	The respondents are very worried of the effects of climate change.
2	1.75-2.49	Slightly Concerned	The respondents are a little bit worried of the effects of climate change.
1	1.00-1.74	Not Concerned	The respondents were not worried of the effects of climate change.

Table 3: Scoring Procedure for the Action to Mitigate Climate Change

Scale	Weighted Mean	Category	Description
4	3.25-4.00	Always	The respondents constantly do the mitigating action.
3	2.50-3.24	Often	The respondents frequently do the mitigating action.
2	1.75-2.49	Rarely	The respondents sometimes do the mitigating action.
1	1.00-1.74	Never	The respondents do not do at all in mitigating action.

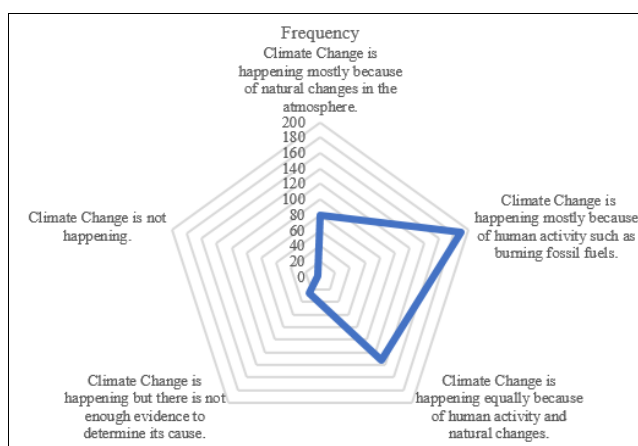


Fig 2: Views about Climate Change using Web Chart

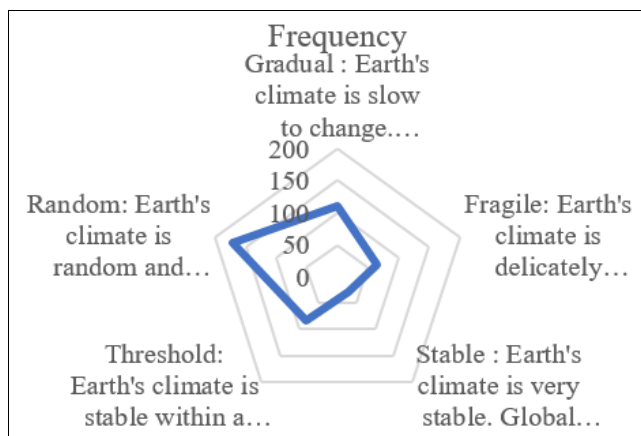


Fig 3: Views about Climate Change using Web Chart

Result and Discussion
Views about Climate Change

From the data presented in the web chart (Fig 2), the overwhelming majority of people surveyed believed that climate change is happening and that human activity is a major contributing factor. A smaller portion of the people surveyed assumed that climate change is caused by a combination of human activity and natural causes, while a very small fraction of people were convinced that climate change is not happening at all. There is no data presented in the web chart to support the idea that climate change is happening, but the cause is unknown.

This web chart (Fig 3) categorizes views on climate change into four areas: Stable, random, fragile, and threshold. "Fragile" is positioned closest to "Rapid," suggesting that many people (around 140) believe climate change is unstable and could worsen quickly. "Random" is furthest from "Rapid," indicating that some people (around 50)

believe climate change is unpredictable. "Threshold" suggests a view that there is a tipping point beyond which the effects of climate change will become irreversible (around 80 people). "Stable" is positioned far from "Rapid," indicating that some people (around 50) believe climate change is not happening or is not happening quickly.

Overall, the web chart suggested that there is a wide range of views on climate change among the 400 respondents, with most people believing it's happening rapidly and is a serious threat. However, there is also a significant minority who think that climate change is not happening or is not happening quickly. The USGS National Climate Change Viewer (NCCV) provides an easy-to-use web application that visualizes climate change projections at various scales, making climate-change information accessible to resource managers and citizens^[3].

Level of Concern about climate change

Table 4: Level of Concern about Climate Change using the Four-Point Likert Scale

Questions	Weighted Mean	Description
Family	3.64	The respondents are deeply worried of the effect of climate change in terms of the family
Community	3.40	The respondents are very worried of the effect of climate change in terms of the community or barangay
Nation	3.34	The respondents a little bit worried of the effect of climate change in terms of the Philippines
Other countries	3.07	The respondents were not worried of the effect of climate change in terms of other Countries.

The table showed that people are most worried about climate change affecting their family, with a weighted mean of 3.64. And least worried about it affecting other countries (3.07). There is also a slight decrease in concern between family (3.64) and community (3.40) and the Philippines (3.34). The journal article "Towards an East Asian Model of Climate Change Awareness: A Questionnaire Study among university students in Taiwan^[4] is a good example of a

citation regarding concern about climate change measured on a four-point Likert scale. This study investigates climate change awareness in Taiwan, using a four-point Likert scale to gauge student concern. The scale likely ranged from "not at all concerned" to "very concerned" (though the exact wording is not mentioned)^[5].

Actions to mitigate climate change

Table 5: Weighted Mean in Action to Mitigate Climate Change Using Four-Point Likert Scale

Questions	Weighted Mean	Description
Carpool	1.79	The respondents sometimes do the mitigating action in the carpool
Walking or Ride a Bike	2.96	The respondents frequently do the mitigating action by Walking or Ride
Using Public Transportation	3.42	The respondents constantly do the mitigating action by Using Public Transportation
Turn off lights and appliances	3.48	The respondents constantly do mitigating action by turning off lights and appliances
Recycle	2.90	The respondents frequently do the mitigating action in Recycle
Set the thermostat lower in the rainy season or higher in the summer	1.79	The respondents sometimes do the mitigating action by setting thermostats lower in the rainy season or higher in summer.

The table showed the weighted mean in action to mitigate climate change using a four-point Likert scale. The weighted mean is a measure of how often people perform specific actions to reduce their impact on the environment.

The result suggests that the easiest actions for people to take in order to mitigate climate change are turning off the lights and appliances and using public transportation (3.48 and 3.42, respectively). This research may help explain people's actions or inactions, including support of climate change and adaptation policies^[6].

Conclusion

This District Five study assessed residents' climate change beliefs, revealing a strong understanding of human activity, with fossil fuels as the cause, and a high level of concern for their families' well-being. Current mitigation efforts focus on personal actions like conserving energy and using public transport. These mitigations would reduce greenhouse gas emissions and ensure a sustainable future.

Recommendations

It is recommended that public awareness campaigns led by organizations and the government be launched to highlight the benefits of individual actions like switching off lights and using public transportation.

Drafting of Policy within the 5th district:

1. Rebuild mass transit and boost multimodality
2. Electrified transportation, using e-bus.
3. Enable walking and cycling. Provide lanes for bicycles and walking zones.
4. Keeping the electrified grid modernized.
5. Invest in new technologies that reduce emissions (parking apps, charging apps).

These policies are recommended for implementation to effectively address climate change concerns in District Five.

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