

# ISRG Journal of Arts, Humanities and Social Sciences (ISRGJAHSS)



**ISRG PUBLISHERS**

Abbreviated Key Title: ISRG J Arts Humanit Soc Sci

ISSN: 2583-7672 (Online)

Journal homepage: <https://isrgpublishers.com/isrgjahss>

Volume– IV Issue -II (March - April) 2026

Frequency: Bimonthly



## MITIGATING THE EFFECTS OF CLIMATE CHANGE: BASIS FOR A SCHOOL-BASED AWARENESS PROGRAM

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| **Received:** 15.04.2026 | **Accepted:** 20.04.2026 | **Published:** 28.04.2026

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### Abstract

*This study which dealt on Mitigating the Effects of Climate Change: Basis for a School-Based Awareness Program, examined the beliefs, willingness, and proactive actions of respondents regarding climate change. Employing a quantitative descriptive-correlational research design, the study was administered to duly enrolled Grade 12 senior high school students of Camalaniugan National High School recruited via stratified random sampling. Survey questionnaire served as the main instrument used to gather data.*

*Findings revealed that respondents possess a consistently high level of belief about climate change, particularly in recognizing human activities as primary contributors. They also demonstrated strong awareness of its impacts and the urgency of taking action. In terms of willingness, respondents exhibited a very high readiness to engage in climate change mitigation, with greater inclination toward advocacy and educational involvement than toward personal behavioral changes. Likewise, respondents showed a very high extent of proactive actions, especially in influencing others and participating in awareness-driven initiatives, while also maintaining engagement in personal and community-based environmental practices.*

*The study further found that sex significantly influences respondents' beliefs, willingness, and proactive actions.*

*Moreover, significant positive relationships were identified among beliefs, willingness, and proactive actions, indicating that stronger climate change beliefs are associated with higher motivation and greater engagement in environmental behaviors*

**Keywords:** climate change, environment-friendly, practices, ecological loss

### INTRODUCTION

Climate change remains one of the most urgent and far-reaching global challenges of the 21st century, threatening environmental stability, human welfare, and the long-term sustainability of communities. Its impacts—ranging from intensified storms to sea-level rise, prolonged droughts, and ecosystem degradation—

demand not only scientific innovation but also informed and proactive participation from the public, especially the youth. As emphasized by Albugami et al. (2024), mitigating climate change requires immediate attention and broad societal involvement, given that adaptation capacities vary widely across species and

ecosystems. How quickly humans and natural systems can respond to these accelerating disruptions continues to be a central concern in climate research (Field et al., 2009).

In the Philippines, one of the world's most climate-vulnerable nations, the urgency is especially pronounced. The Cagayan Valley region has, in recent years, experienced a series of increasingly destructive storms that illustrate the intensifying effects of climate change. Communities recall the devastation brought by extreme flooding, prolonged rainfall, and typhoon-induced landslides that submerged towns, displaced families, and disrupted schooling for weeks. These events are no longer isolated incidents but recurring reminders of how shifting weather patterns are reshaping local realities. With low-lying and river-connected areas at heightened risk from extreme weather, flooding, and ecological loss, the region exemplifies the pressing need for well-grounded mitigation and adaptation strategies—strategies that rely heavily on awareness, preparedness, and collective action (Alcantara et al., 2023).

At the forefront of this movement is Generation Alpha, the cohort born from 2010 onward, who are growing up in an era where climate discourse is not peripheral but central to everyday life. Unlike previous generations, they are introduced early to concepts of sustainability, environmental protection, and climate responsibility—both in school and across digital spaces. Many young learners today display a striking environmental awareness: they are the children who join school-based tree-planting drives, segregate waste with conviction, advocate for paperless classrooms, and challenge adults to rethink unsustainable habits. Their lived experiences—such as witnessing severe floods in their communities or seeing school classes suspended due to extreme weather—shape a generation that is not only environmentally conscious but also eager to be part of the solution.

Studies consistently show that enhanced awareness, accurate climate communication, and context-specific education significantly strengthen adaptive capacity (Cabada et al., 2023; Hellen Nanlohy, 2015). While much climate research focuses on coastal communities and large-scale adaptation strategies, schools represent a critical social environment where beliefs, values, and environmental behaviors begin to take shape. Students, particularly those belonging to Generation Alpha, hold the potential to become catalysts of environmental stewardship—translating knowledge into personal responsibility, sustainable habits, and proactive community engagement.

People all across the world have probably experienced the effects of climate change, but they are unaware of the causes or how to lessen them (Haider, 2019; Sola & Michael, 2016). As a remedy, society would be sufficiently informed on the causes, consequences, and adaptive measures to lessen the effects of climate change (Malgwi & Joshua, 2021; Mochizuki & Bryan, 2015). This knowledge will influence people's actions to adapt to climate change and lessen its impacts (Akhtar et al., 2018; Mustafa et al., 2019; Okaka & Odhiambo, 2018) and direct them to act in an environmentally responsible manner (Eze, 2020; Higde et al., 2017).

Van Valkengoed et al. (2023) further found that stronger perceptions of climate change were linked to stronger perceptions of climate-related dangers, which in turn influenced people's intentions to adopt adaptive measures. Interestingly, however, these heightened perceptions did not directly predict the actual implementation of such measures over time. While high self-

efficacy and outcome efficacy did not strengthen the relationships between perception and action, they were significantly associated with the translation of intentions into concrete adaptive behaviors within a year.

Taken together, these insights highlight the crucial role of environmental awareness especially among young learners in shaping long-term resilience. As the Philippines continues to confront the realities of a changing climate, empowering Generation Alpha with accurate knowledge and meaningful engagement may be one of the most sustainable pathways toward climate-resilient communities.

This study generally aimed to look into mitigating the effects of climate change as a basis for a school-based awareness program.

Specifically, it aimed to answer the following questions:

1. *What is the profile of the students as to*
  - a. sex
  - b. age
  - c. Religious affiliation
2. *What are the student's general belief about climate change as to?*
  - 2.1. Belief in Causes of Climate Change
  - 2.2. Belief in Impacts of Climate Change
  - 2.3. Belief in Urgency of Climate Action
3. *What is the level of willingness of the students in mitigating climate change*
  - 3.1. Willingness to Engage in Advocacy and Education
  - 3.2. Willingness to Adapt Environment-Friendly Practices
4. *What are the proactive actions of the students to mitigate climate change?*
  - 4.1. Personal Environment-Friendly Practices
  - 4.2. School or Community Participation
  - 4.3. Advocacy and Influence
5. *Is there a significant difference between the general beliefs, level of willingness, proactive actions in climate change mitigation when grouped according to profile?*
6. *Is there a significant relationship on the general belief, level of wiliness, profile and on the proactive action towards climate change?*

What school-based awareness program can be proposed?

## METHODOLOGY

The study utilized descriptive-correlational design. Descriptive method was used to determine the profile of the respondents along personal details, their general beliefs about climate change along the dimensions of belief in causes of climate change, belief in impacts of climate change and the urgency of climate action; the level of willingness of the students in mitigating climate change, willingness to Engage in Advocacy and Education and willingness to Adapt Environment-Friendly Practices; the proactive actions of the students to mitigate climate change on Personal Environment-Friendly Practices, School or Community Participation and Advocacy and Influence.

Correlation on the other hand was used to gauge if there is a significant relationship on the general belief, level of wiliness, profile and on the proactive action of the respondents towards climate change.

The study was conducted at Camalaniugan National High School, Camalaniugan Cagayan. The respondents utilized in the study were the Senior High School of Camalaniugan National High School, Camalaniugan, Cagayan. Stratified Random Sampling was utilized.

The main tool used in gathering data is a survey questionnaire which was divided into different parts.

Part 1 of the study dealt on the demographic profiles of the respondents in terms of sex, age and religious affiliation.

Part 2 dealt on students' general belief in belief in causes of climate change, belief in impacts of climate change and the urgency of climate action.

Part 3 assessed the level of willingness of the students in mitigating climate change, willingness to Engage in Advocacy and Education and willingness to Adapt Environment-Friendly Practices; the proactive actions of the students to mitigate climate change on Personal Environment-Friendly Practices, School or Community Participation and Advocacy and Influence.

Upon approval of the thesis proposal, the researcher formally communicated with the Department of Education by sending a request letter seeking permission to conduct the study and informing the concerned offices of its purpose and scope. In adherence to the university's ethical standards, the researcher accomplished and submitted all required documents for Institutional Review Board (IRB) evaluation. Only upon securing IRB certification did the researcher proceed to transmit an endorsement letter to the Principal of Camalaniugan National High School to request authorization for administering the research instruments.

The questionnaire also underwent pilot testing among students at Aparri School of Arts and Trades. The researcher personally administered the questionnaires to ensure fidelity in the data collection procedures. Subsequently, all responses gathered through both quantitative and qualitative instruments were systematically categorized, organized, analyzed, and interpreted in accordance with the study's analytical framework.

Frequency, percentage counts, percentage distribution, means, standard deviations and ranks were utilized in describing the profile variables of the respondents.

On the general belief, the scoring below was used with its interpretation:

| Scale | Weighted Mean | Descriptive Interpretation |
|-------|---------------|----------------------------|
| 5     | 4.21 – 5.00   | Very High                  |
| 4     | 3.41 – 4.20   | High                       |
| 3     | 2.61 – 3.40   | Moderate                   |
| 2     | 1.81 – 2.60   | Low                        |

For the willingness part, the scale below was utilized

| Scale | Weighted Mean | Descriptive Interpretation |
|-------|---------------|----------------------------|
| 5     | 4.21 – 5.00   | Very Willing               |
| 4     | 3.41 – 4.20   | Willing                    |
| 3     | 2.61 – 3.40   | Moderately Willing         |
| 2     | 1.81 – 2.60   | Unwilling                  |

|   |             |                |
|---|-------------|----------------|
| 1 | 1.00 – 1.80 | Very Unwilling |
|---|-------------|----------------|

For the proactive part, this scale was employed:

| Scale | Weighted Mean | Descriptive Interpretation |
|-------|---------------|----------------------------|
| 5     | 4.21 – 5.00   | Very Highly Proactive      |
| 4     | 3.41 – 4.20   | Highly Proactive           |
| 3     | 2.61 – 3.40   | Moderately Proactive       |
| 2     | 1.81 – 2.60   | Slightly Proactive         |
| 1     | 1.00 – 1.80   | Not Proactive              |

Furthermore, the Pearson Product Moment Correlations was employed to determine the correlation among the variables.

## RESULTS AND DISCUSSION

This section presents the results and discussion of the study, highlighting the key findings derived from the data analysis and providing their corresponding interpretations. It examines the results in relation to the research objectives and existing literature, offering insights into their implications and significance. Through this discussion, the study aims to provide a deeper understanding of the issues investigated and to support evidence-based conclusions.

### Profile of the Respondents

Table 1 shows the distribution of senior high school students in terms of profile variables. Variables considered for profile are age, sex and religion. As gleaned in the table, the majority of respondents are aged 18–19 years (78.9%), which also reflects the highest proportion, while those aged 20 or above (1.6%) represent the lowest. The mean age of 17.98 years indicates that respondents are predominantly late adolescents.

In terms of sex, females (58.4%) outnumber males (41.6%), making them the dominant group. Regarding religious affiliation, Roman Catholics (71.6%) comprise the majority, while other affiliations (28.4%) form the minority.

The data generally indicates that the respondents are largely young, female, and Roman Catholic, suggesting a relatively homogeneous demographic profile.

**Table 1.** Distribution of the respondents in terms of their profile

| Variables                    | Frequency (n=190)     | Percentage     |
|------------------------------|-----------------------|----------------|
| <i>Age (in years)</i>        |                       |                |
| 17 or below                  | 37                    | 19.5           |
| 18 to 19                     | 150                   | 78.9           |
| 20 or above                  | 3                     | 1.6            |
|                              | <i>Mean=17.98 y/o</i> | <i>SD=0.65</i> |
| <i>Sex</i>                   |                       |                |
| Female                       | 111                   | 58.4           |
| Male                         | 79                    | 41.6           |
| <i>Religious affiliation</i> |                       |                |

|                |     |      |
|----------------|-----|------|
| Roman Catholic | 136 | 71.6 |
| Others         | 54  | 28.4 |

### General Beliefs of the Respondents about Climate Change Beliefs in Causes of Climate Change

Table 2 shows the weighted means and general beliefs of the respondents about climate change in terms of its causes. As can be gleaned from the table, the highest mean (4.97) is attributed to the belief that human activities significantly contribute to climate change, indicating very strong awareness of anthropogenic causes. Followed by burning fossil fuels as a major cause of global warming, and pollution from industries and vehicles contributing to climate related problems both reported with the mean of 4.94. meanwhile, deforestation increasing climate change severity also received a mean of 4.94 while the lowest mean (4.87), although still high, is on the idea that climate change is caused by both natural and human factors.

This finding means that the respondents exhibit a very strong belief in human-induced causes of climate change. This suggests effective climate education emphasizing human responsibility, which can be leveraged to strengthen accountability-driven environmental programs. Belief-Action Theory supports this claim as the theory asserts that when individuals strongly believe that humans cause climate change, they are more likely to feel responsible and engage in pro-environmental actions.

**Table 2a.** Weighted means and general beliefs of the respondents about climate in terms of its causes

| Statements  | Weighted Mean | Descriptive Value     |
|---|---------------|-----------------------|
| 1. Human activities significantly contribute to climate change.             | 4.97          | Strongly agree        |
| 2. Burning fossil fuels is a major cause of global warming.                 | 4.94          | Strongly agree        |
| 3. Deforestation increases the severity of climate change.                  | 4.93          | Strongly agree        |
| 4. Pollution from industries and vehicles worsens climate-related problems. | 4.94          | Strongly agree        |
| 5. Climate change is caused by both natural and human factors               | 4.87          | Strongly agree        |
| <b>Dimension Mean</b>   | <b>4.93</b>   | <b>Strongly agree</b> |

### Beliefs in Impacts of Climate Change

Table 2b presents the weighted means reflecting the respondents' general beliefs about climate change in terms of its impacts. The results indicate that the respondents *strongly agree* with all the given statements, highlighting a consistently high level of awareness. Among the items, the statement "*Climate change negatively affects biodiversity and ecosystems*" obtained the highest weighted mean of 4.91, suggesting that students are particularly cognizant of the environmental consequences of climate change. This is followed by "*Climate change causes unpredictable weather patterns*" and "*Climate change leads to stronger and more frequent typhoons,*" both with a weighted mean

of 4.86. Meanwhile, the statements "*Rising sea levels threaten coastal communities like ours*" and "*Climate change poses risks to food supply and livelihood*" registered the lowest means of 4.85, although still interpreted as *strongly agree*.

The data imply that while respondents demonstrate a high and consistent awareness of the diverse impacts of climate change, their understanding is more pronounced in terms of ecological and environmental effects than socio-economic consequences. The higher mean on biodiversity loss suggests that environmental degradation is more immediately recognized, whereas slightly lower means on coastal threats and food security may indicate comparatively less emphasis on localized and livelihood-related impacts.

**Table 2b.** Weighted means and general beliefs of the respondents about climate in terms of its impact.

| Statements  | Weighted Mean | Descriptive Value     |
|---|---------------|-----------------------|
| 1. Climate change leads to stronger and more frequent typhoons.   | 4.86          | Strongly agree        |
| 2. Rising sea levels threaten coastal communities like ours.      | 4.85          | Strongly agree        |
| 3. Climate change negatively affects biodiversity and ecosystems. | 4.91          | Strongly agree        |
| 4. Climate change causes unpredictable weather patterns.          | 4.86          | Strongly agree        |
| 5. Climate change poses risks to food supply and livelihood.      | 4.85          | Strongly agree        |
| <b>Dimension Mean</b>   | <b>4.87</b>   | <b>Strongly agree</b> |

### Beliefs in Urgency of Climate Action

The weighted means reflecting the respondents' general beliefs about climate change, particularly in terms of its urgency for action, indicate a consistently high level of agreement across all indicators. As shown in the table, the respondents *strongly agree* that every individual has a responsibility to help mitigate climate change, which obtained the highest weighted mean of 4.92. This is followed by the belief that without action, climate change impacts will worsen (4.88), schools should help raise awareness about climate change (4.87), and immediate action is necessary to reduce climate risks (4.86). Meanwhile, the statement that climate change is a serious global threat registered the lowest mean of 4.81, although it still falls within the *strongly agree* category.

These results suggest that respondents demonstrate a strong sense of personal and collective responsibility toward addressing climate change. The prominence of individual responsibility as the highest-rated item indicates that learners are not only aware of the issue but also recognize their role in mitigation efforts. However, the relatively lower mean for perceiving climate change as a global threat may imply that while students acknowledge the seriousness of the issue, its abstract or large-scale nature may be less immediately internalized compared to personal or action-oriented perspectives.

**Table 2c.** Weighted means and general beliefs of the respondents about climate change in terms of its urgency for action

| Statements  | Weighted Mean | Descriptive Value     |
|---|---------------|-----------------------|
| 1. Climate change is a serious global threat.                             | 4.81          | Strongly agree        |
| 2. Immediate action is necessary to reduce climate risks.                 | 4.86          | Strongly agree        |
| 3. Schools should help raise awareness about climate change.              | 4.87          | Strongly agree        |
| 4. If no action is taken, climate change impacts will worsen.             | 4.88          | Strongly agree        |
| 5. Every individual has a responsibility to help mitigate climate change. | 4.92          | Strongly agree        |
| <b>Dimension Mean</b>   | <b>4.87</b>   | <b>Strongly agree</b> |

**Summary of Beliefs**

Shown in Table 2d is the overall mean and general beliefs of the respondents about climate change. Evident in the data, belief in the causes of climate change obtained the highest mean of 4.93, while both belief in the impacts of climate change and belief in the urgency of climate action registered slightly lower but equal means of 4.87. The overall mean of 4.89, interpreted as *strongly agree*, indicates that respondents possess a consistently high level of belief and awareness regarding climate change across all dimensions.

The higher mean for beliefs in causes suggests that respondents have a strong understanding of the factors contributing to climate change, particularly human-induced activities. In contrast, the slightly lower means for impacts and urgency, although still very high, may imply that respondents are somewhat less emphatic when it comes to fully internalizing the consequences and the immediacy of action required.

**Table 2d.** Overall mean and general beliefs of the respondents about climate change

| Dimension                              | Mean        | Descriptive Value     |
|--|-------------|-----------------------|
| 1. Belief in causes of climate change  | 4.93        | Strongly agree        |
| 2. Belief in impacts of climate change | 4.87        | Strongly agree        |
| 3. Belief in urgency of climate action | 4.87        | Strongly agree        |
| <b>Overall Mean</b>                    | <b>4.89</b> | <b>Strongly agree</b> |

**Level of Willingness of the Respondents in Mitigating Climate Change**

**Willingness to Engage in Advocacy and Education**

The willingness of the respondents to mitigate climate change, particularly in terms of their engagement in advocacy and education, is presented in Table 3a. The data show that respondents exhibit a very high level of willingness across all indicators, with a

dimension mean of 4.88. Among the items, the statement “*I am willing to share information about climate change with others*” obtained the highest weighted mean of 4.91, indicating that respondents are most inclined toward information dissemination and awareness-building activities. This is followed by “*I am willing to use social media to promote climate awareness*” with a mean of 4.90, highlighting the role of digital platforms in advocacy efforts.

On the other hand, the lowest mean of 4.85 is observed in the statement “*I am willing to encourage my peers to take climate actions,*” although it still falls within the *very high* category. This suggests that while respondents are highly willing to engage in advocacy, slightly less emphasis is placed on direct peer influence compared to broader information-sharing strategies.

Overall, the findings indicate that respondents are highly receptive to participating in advocacy and educational initiatives, particularly those that involve communication and awareness dissemination. This reflects a strong readiness to contribute to climate action through knowledge-sharing and active participation in school-related programs.

**Table 3a.** Weighted means and level of willingness of the respondents in mitigating climate change in terms of engaging in advocacy and education

| Statements   | Weighted Mean | Descriptive Value |
|--|---------------|-------------------|
| 1. I am willing to participate in school programs about climate change.      | 4.86          | Very high         |
| 2. I am willing to share information about climate change with others.       | 4.91          | Very high         |
| 3. I am willing to join seminars, workshops, or trainings on climate issues. | 4.86          | Very high         |
| 4. I am willing to encourage my peers to take climate actions.               | 4.85          | Very high         |
| 5. I am willing to use social media to promote climate awareness.            | 4.90          | Very high         |
| <b>Dimension Mean</b>  | <b>4.88</b>   | <b>Very high</b>  |

**Willingness to Adapt Environment-Friendly Practices**

Table 3b presents the respondents’ level of willingness to adopt environment-friendly practices. The findings reveal a very high level of willingness across all indicators, with respondents showing the greatest willingness to choose eco-friendly products, when possible, which obtained the highest weighted mean of 4.90. This is followed by their willingness to participate in tree planting or coastal clean-up activities (4.84) and to conserve water and energy at home and in school (4.84). Meanwhile, slightly lower means are observed in their willingness to reduce the use of plastics and wasteful materials (4.81) and to support school policies that promote environmental protection (4.80), although both are still interpreted as *very high*.

The results suggest that respondents are more inclined toward individual, consumption-based, and action-oriented practices, such as choosing eco-friendly products, compared to more collective or policy-related engagements. The relatively lower mean for supporting school policies may indicate that students are less exposed to or less involved in institutional environmental governance.

Overall, the data indicate that respondents possess a strong willingness to engage in sustainable practices, particularly at the personal level.

**Table 3b.** Weighted means and level of willingness of the respondents in mitigating climate change in terms of adapting environment-friendly practices

| Statements   | Weighted Mean | Descriptive Value |
|--|---------------|-------------------|
| 1. I am willing to reduce my use of plastics and wasteful materials.             | 4.81          | Very high         |
| 2. I am willing to conserve water and energy at home and in school               | 4.84          | Very high         |
| 3. I am willing to support school policies that promote environmental protection | 4.80          | Very high         |
| 4. I am willing to choose eco-friendly products when possible.                   | 4.90          | Very high         |
| 5. I am willing to participate in tree planting or coastal clean-up activities.  | 4.84          | Very high         |
| <b>Dimension Mean</b>  | <b>4.84</b>   | <b>Very high</b>  |

**Summary of Level of Willingness**

Table 3c presents the summary of the respondents' level of willingness to mitigate climate change across two key dimensions. As reflected in the data, both dimensions obtained a *very high* descriptive value, indicating a consistently strong willingness among respondents to engage in climate change mitigation efforts. Specifically, willingness to engage in advocacy and education recorded the highest mean of 4.88, while willingness to adopt environment-friendly practices obtained a slightly lower mean of 4.84. The overall mean of 4.86, interpreted as *very high*, further confirms that respondents are highly willing to participate in both awareness-driven and action-oriented initiatives.

The higher mean in advocacy and education suggests that respondents are more inclined toward information dissemination, awareness campaigns, and educational involvement, reflecting their readiness to communicate and promote climate-related issues. On the other hand, although still very high, the slightly lower mean in adopting environment-friendly practices may indicate that behavioral changes requiring consistent personal effort are somewhat less prioritized compared to advocacy-related activities.

These findings suggest that while respondents possess a strong willingness across both domains, there is a greater tendency toward cognitive and communicative engagement rather than purely behavioral commitments.

**Table 3c.** Overall mean and level of willingness of the respondents mitigating climate change

| Dimension  | Mean        | Descriptive Value |
|--|-------------|-------------------|
| 1. Willingness to Engage in Advocacy and Education     | 4.88        | Very high         |
| 2. Willingness to Adapt Environment-Friendly Practices | 4.84        | Very high         |
| <b>Overall Mean</b>                                    | <b>4.86</b> | <b>Very high</b>  |

**Proactive Actions of the Respondents to Reduce Climate Change Personal Environment-Friendly Practices**

Table 4a presents the weighted means and extent of proactive actions of the respondents in reducing climate change in terms of personal environment-friendly practices. The results reveal that all indicators are interpreted as very high extent, with a dimension mean of 4.86, indicating that respondents consistently practice environmentally responsible behaviors in their daily lives.

Among the items, *"I regularly segregate my waste at home or in school"* obtained the highest weighted mean of 4.89, suggesting that waste segregation is the most consistently practiced behavior among the respondents. This may be attributed to its integration into daily routines, possibly reinforced by local waste management policies and community practices such as scheduled garbage collection and segregation requirements. This is followed by *"I turn off lights and appliances when not in use"* (4.88), *"I bring reusable bags, bottles, or containers"* (4.86), and *"I choose sustainable options such as walking, biking, or carpooling"* (4.86). It is also worth noting that the consistently high engagement in environmentally friendly practices among the respondents may be influenced by their shared community context. Specifically, Camalaniugan, being the common residence of the respondents, has long implemented a "no single-use plastic" policy, which likely reinforces sustainable behaviors such as bringing reusable bags and reducing waste. This community-based environmental initiative may have contributed to the respondents' habitual practice of eco-friendly actions, as environmental behaviors are often shaped and sustained by local policies and social norms.

**Table 4a.** Weighted means and extent of proactive actions of the respondents to reduce climate change in terms of personal environment-friendly practices

| Statements  | Weighted Mean | Descriptive Value |
|---|---------------|-------------------|
| 1. I regularly segregate my waste at home or in school.                             | 4.89          | Very high extent  |
| 2. I bring reusable bags, bottles, or containers to reduce waste.                   | 4.86          | Very high extent  |
| 3. I turn off lights and appliances when not in use.                                | 4.88          | Very high extent  |
| 4. I avoid burning trash or contributing to harmful emissions.                      | 4.81          | Very high extent  |
| 5. I choose sustainable options when available (e.g., walking, biking, carpooling). | 4.86          | Very high extent  |
| <b>Dimension Mean</b>   | <b>4.86</b>   | <b>Very high</b>  |

**School or Community Participation**

Table 4b presents the weighted means and extent of proactive actions of the respondents in reducing climate change in terms of school or community participation. The results show that respondents demonstrate a very high extent of participation across all indicators, with a consistent pattern of active engagement in environmental initiatives. Among the items, “I volunteer in environmental programs or activities when given the chance” obtained the highest weighted mean of 4.91, indicating that respondents are highly willing to take part in organized environmental efforts when opportunities are available. This is followed by “I involve myself in school campaigns related to climate awareness” with a mean of 4.86, as well as “I help educate my family or friends about climate change” (4.83).

On the other hand, the statement “I have joined tree planting or reforestation activities” registered the lowest mean of 4.79, although it is still interpreted as *very high extent*. This suggests that while respondents are generally active in school- and community-based environmental initiatives, participation in more physically demanding or scheduled activities such as tree planting may be slightly less frequent compared to awareness campaigns and volunteer-based engagements.

The findings indicate that respondents are highly engaged in environmental participation at the school and community levels, particularly in voluntary and awareness-oriented activities.

**Table 4b.** Weighted means and extent of proactive actions of the respondents to reduce climate change in terms of school or community participation

| Statements  | Weighted Mean | Descriptive Value       |
|---|---------------|-------------------------|
| 1. I have joined tree planting or reforestation activities.                   | 4.79          | Very high extent        |
| 2. I have participated in coastal or community clean-ups.                     | 4.86          | Very high extent        |
| 3. I involve myself in school campaigns related to climate awareness.         | 4.86          | Very high extent        |
| 4. I volunteer in environmental programs or activities when given the chance. | 4.91          | Very high extent        |
| 5. I help educate my family or friends about climate change                   | 4.83          | Very high extent        |
| <b>Dimension Mean</b>   | <b>4.85</b>   | <b>Very high extent</b> |

**Advocacy and Influence**

Table 4c presents the weighted means and extent of proactive actions of the respondents in reducing climate change in terms of advocacy and influence. As gleaned from the table, the respondents demonstrate a very high extent of engagement across all indicators, with a strong tendency to influence others and support environmental initiatives.

Among the items, “I proactively encourage others to adopt environment-friendly practices” and “I avoid supporting products or companies that harm the environment” both obtained the

highest weighted mean of 4.89, indicating that respondents are highly conscious not only of their own actions but also of their influence on others and their consumption choices. This is followed by “I support initiatives that help reduce carbon footprint” with a mean of 4.88, and “I take initiative in reporting environmental problems to authorities or teachers” with 4.87. Meanwhile, “I practice sustainable consumption such as recycling and reusing materials” registered a slightly lower mean, though still within the *very high extent* category.

The findings suggest that respondents are not only engaged in personal environmental practices but are also active agents of influence, promoting sustainability within their social and institutional contexts. Their high level of advocacy reflects a growing awareness of the importance of collective action in addressing environmental issues.

**Table 4c.** Weighted means and extent of proactive actions of the respondents to reduce climate change in terms of advocacy and influence

| Statements  | Weighted Means | Descriptive Value       |
|---|----------------|-------------------------|
| 1. I encourage others to adopt environment-friendly practices.                    | 4.89           | Very high extent        |
| 2. I take initiative in reporting environmental problems to authorities/teachers. | 4.87           | Very high extent        |
| 3. I avoid supporting products or companies that harm the environment.            | 4.89           | Very high extent        |
| 4. I practice sustainable consumption (e.g., recycling, reusing materials).       | 4.86           | Very high extent        |
| 5. I support initiatives that help reduce carbon footprint                        | 4.88           | Very high extent        |
| <b>Dimension Mean</b>   | <b>4.88</b>    | <b>Very high extent</b> |

**Summary of Extent of Proactive Actions**

Table 4d presents the overall mean and extent of proactive actions of the respondents in reducing climate change. As revealed in the table, all dimensions are interpreted as having a very high extent, indicating consistently strong engagement in environmental actions among the respondents. The highest dimension is advocacy and influence, which obtained a mean of 4.88, followed closely by personal environment-friendly practices with a mean of 4.86, and school or community participation, which also registered a very high level of engagement.

The results suggest that respondents are most active in influencing others and promoting environmental awareness, demonstrating their role as advocates of sustainable practices. Meanwhile, their engagement in personal practices indicates that environmental responsibility is also embedded in their daily routines. Although school or community participation ranks slightly lower compared to the other dimensions, it still reflects a strong level of involvement in collective environmental efforts.

Overall, the findings indicate that respondents demonstrate a well-rounded and highly active engagement in climate change mitigation, both at the personal and social levels.

**Table 4d.** Overall mean and extent of proactive actions of the respondents to reduce climate change

| Dimension                                  | Mean        | Descriptive Value       |
|--|-------------|-------------------------|
| 1. Personal Environment-Friendly Practices | 4.86        | Very high extent        |
| 2. School or Community Participation       | 4.85        | Very high extent        |
| 3. Advocacy and Influence                  | 4.88        | Very high extent        |
| <b>Overall Mean</b>                        | <b>4.86</b> | <b>Very high extent</b> |

**Differences in the Beliefs of the Respondents in Climate Change by Profile**

The study hypothesized that there is no significant difference in the beliefs of the respondents on climate change when grouped according to profile variables. The results reveal that sex shows a statistically significant difference, as reflected by the t-value of 5.857 and a probability value of 0.016, which is lower than the 0.05 level of significance. This leads to the rejection of the null hypothesis, indicating that beliefs about climate change vary significantly when respondents are grouped according to sex.

As shown in the post hoc analysis appended, male respondents (M = 4.93, SD = 0.17) obtained a higher mean compared to female respondents (M = 4.86, SD = 0.20). This suggests that male respondents demonstrate slightly stronger beliefs about climate change compared to their female counterparts, although both groups still fall under the descriptive category of *strongly agree*.

This finding implies that while both groups exhibit high levels of climate change awareness and belief, there are subtle differences in the strength of their perceptions. The higher mean among male respondents may indicate differences in exposure, interest, or engagement with climate-related information, although both groups remain highly aware of climate change issues.

The result underscores that sex is a significant differentiating factor in shaping beliefs about climate change, suggesting the need for gender-responsive approaches in environmental education and awareness programs.

**Table 5a.** Comparison statistics of the beliefs of the respondents in climate change when grouped by profile

| Grouping Variables               | F- or t-value | Probability | Inference       |
|----------------------------------|---------------|-------------|-----------------|
| <b>Beliefs in climate change</b> |               |             |                 |
| Age                              | 1.937         | 0.147       | Not significant |
| Sex                              | 5.857         | 0.016       | Significant     |
| Religious affiliation            | 0.384         | 0.536       | Not significant |

*\*tested at 0.05 level of significance*

**Differences in the Level of Willingness of the Respondents in Mitigating Climate Change by Profile**

The study hypothesized that there is no significant difference in the level of willingness of the respondents to mitigate climate change when grouped according to profile variables. As shown in Table 5b, age (p = 0.310) and religious affiliation (p = 0.144) both yielded probability values greater than 0.05, indicating that there are no significant differences in willingness when respondents are

grouped according to these variables. Thus, the null hypothesis is accepted for these variables.

However, sex obtained a t-value of 5.019 with a probability of 0.026, which is less than the 0.05 level of significance. This indicates a significant difference in the level of willingness based on sex, leading to the rejection of the null hypothesis for this variable. Post hoc analysis herein appended indicated that males have higher willingness as compared to females as reflected by its mean of 4.90 over the 4.82 among females.

This result suggests that while willingness to mitigate climate change is generally consistent across age groups and religious affiliations, it varies significantly between male and female respondents. This implies that sex may influence the degree of openness, motivation, or readiness to engage in climate-related advocacy and environmental actions.

**Table 5b.** Comparison statistics of the level of willingness of the respondents in mitigating climate change when grouped by profile

| Grouping Variables          | F- or t-value | Probability | Inference       |
|-----------------------------|---------------|-------------|-----------------|
| <b>Level of Willingness</b> |               |             |                 |
| Age                         | 1.178         | 0.310       | Not significant |
| Sex                         | 5.019         | 0.026       | Significant     |
| Religious affiliation       | 2.154         | 0.144       | Not significant |

*\*tested at 0.05 level of significance*

**Differences in the Extent of Proactive Actions of the Respondents to Reduce Climate Change by Profile**

The study hypothesized that there is no significant difference in the extent of proactive actions of the respondents to reduce climate change when grouped according to profile variables. As shown in Table 5c, age (p = 0.879) and religious affiliation (p = 0.396) yielded probability values greater than the 0.05 level of significance, indicating that there are no significant differences in the extent of proactive actions when respondents are grouped according to these variables. Thus, the null hypothesis is accepted for age and religious affiliation.

However, sex obtained a t-value of 4.939 with a probability of 0.027, which is less than the 0.05 level of significance. This indicates a significant difference in the extent of proactive actions based on sex, leading to the rejection of the null hypothesis for this variable.

Further analysis reveals that male respondents demonstrate a significantly higher extent of proactive actions to reduce climate change compared to female respondents. This suggests that while both groups exhibit a very high level of engagement, male respondents are relatively more active in performing environment-friendly practices, participating in community initiatives, and influencing others.

**Table 5c.** Comparison statistics of extent of proactive actions of the respondents to reduce climate change when grouped by profile

| Grouping Variables         | F- or t-value | Probability | Inference       |
|----------------------------|---------------|-------------|-----------------|
| <b>Extent of proactive</b> |               |             |                 |
| Age                        | 0.129         | 0.879       | Not significant |

|                       |       |       |                 |
|-----------------------|-------|-------|-----------------|
| Sex                   | 4.939 | 0.027 | Significant     |
| Religious affiliation | 0.724 | 0.396 | Not significant |

\*tested at 0.05 level of significance

### Relationship among the Beliefs, the Level of Willingness to Mitigate and the Extent of Proactive Actions of the Respondents along Climate Change

The study hypothesized that there is no significant relationship among the respondents' beliefs, level of willingness to mitigate, and extent of proactive actions regarding climate change. The results in Table 6 reveal that all tested relationships yielded probability values of 0.000, which are lower than the 0.05 level of significance. This indicates that the correlations are statistically significant; hence, the null hypothesis is rejected.

Specifically, a moderate to strong positive relationship is observed between beliefs and level of willingness ( $r = 0.631$ ), suggesting that stronger beliefs about climate change are associated with higher willingness to engage in mitigation efforts. Similarly, a strong positive relationship is found between beliefs and extent of proactive actions ( $r = 0.704$ ), indicating that respondents with stronger climate change beliefs are more likely to actively practice environmentally responsible behaviors. Lastly, a moderate positive relationship exists between level of willingness and extent of proactive actions ( $r = 0.633$ ), implying that willingness to act is positively linked with actual environmental behavior.

These findings suggest that the respondents' cognitive understanding and beliefs about climate change are closely connected to both their motivational readiness and their actual engagement in pro-environmental actions. In particular, beliefs appear to play a central role in shaping both willingness and behavior, reinforcing the idea that awareness and understanding are key drivers of environmental action.

**Table 6.** Correlation statistics of beliefs, the level of willingness to mitigate and the extent of proactive actions of the respondents along climate change

| Variables  | r-value | Probability | Inference   |
|--|---------|-------------|-------------|
| Beliefs vs. Level of willingness                     | 0.631   | 0.000       | Significant |
| Beliefs vs. Extent of proactive actions              | 0.704   | 0.000       | Significant |
| Level of willingness vs. Extent of proactive actions | 0.633   | 0.000       | Significant |

\*tested at 0.05 level of significance

### Conclusion

It is concluded that young students demonstrate high awareness and strong beliefs about climate change, particularly regarding its causes, impacts, and urgency for action. They exhibit a very high level of willingness to mitigate climate change, especially through advocacy and educational engagement, alongside a very high extent of proactive environmental actions, notably in advocacy and influence, followed by personal practices and community participation. The results further show that sex significantly influences beliefs, willingness, and actions, while age and religious affiliation do not. Moreover, a significant positive relationship

exists among beliefs, willingness, and proactive actions, indicating that stronger beliefs lead to higher willingness and greater environmental engagement. Overall, the study confirms that students are not only knowledgeable about climate change but are also willing and actively involved in efforts to mitigate its effects.

### Recommendations

The following are strongly recommended: teachers should foster peer-led advocacy and collaborative learning by empowering students to become environmental champions, guiding them through project-based and community engagement activities that translate climate change knowledge into sustained environmental action; school administrators should adopt gender-responsive and inclusive approaches in designing and implementing climate-related programs to ensure equitable participation and maximize learner engagement; and future researchers are encouraged to utilize mixed-methods designs to gain a more comprehensive understanding of students' climate-related beliefs, attitudes, and behaviors, particularly the factors influencing their willingness to engage in proactive environmental actions.

### Declaration of no Conflict of Interest

The author hereby declares no conflict of interest in the conduct of this study. This article is truly his original work.

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