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ENVIRONMENTAL ATTITUDES VERSUS BEHAVIOR OF TOURISM MANAGEMENT STUDENTS: A BASIS FOR EDUCATIONAL PLANNING AND DEVELOPMENT

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Abstract
Environmental degradation though affecting humans is also caused by humans. Hence, their environmental attitude and behavior are important to achieve environmental sustainability. For this reason, the environmental attitude and behavior of people starting with 392 tourism management students in selected colleges and universities in the Philippines, and their significant relationship have been determined using a descriptive-correlational research design and a quantitative research approach. Results show that students have the most positive attitude and the highest level of engagement in terms of energy and water consumption; however, environmental engagement in terms of solid waste management, purchase and use of products, and actual practices recorded low scores. Additionally, there is no significant relationship between the students' environmental attitude and environmental behavior, which indicates that they could not translate what they have in mind into actual practice hence, a problem that must be addressed. Many studies have explored the area of environmental attitude and behavior; however, this is one of the few that have focused on tourism management students, which makes it significant given that environmental conservation and ecotourism are the courses these students study and the fact that most popular tourism attractions in the Philippines are nature-based.

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Keywords
Environmental education, sustainable tourism, tourism students, environment, environmental conservation and sustainability.

INTRODUCTION

Aside from the COVID-19 pandemic, one of the emergencies that the world faces is the continuous deterioration of nature caused by human activities, which results in a variety of phenomena such as, but not limited to, frequent and extreme coastal storms, sea level rise, unpredictable weather patterns, drought, species migration and extinction, disease outbreaks, and pollution of various types. Studies have shown that this is an issue that must be addressed for the world to remain sustainable. Climate change has been one of the biggest, if not the biggest environmental problems over many decades, and it has affected the planet with the changes it has brought. Climate change is expected to significantly alter global ecological and social systems, resulting in fundamental changes in human behavior, according to Evans (2019) and Malhi et al. (2020). It has to do with changes in mean conditions and climate variability, as well as other associated changes such as increased ocean acidification and atmospheric carbon dioxide concentrations, as well as the fact that it interacts with other pressures on ecosystems such as degradation, defaunation, and fragmentation. Meanwhile, the complexity of global climatic systems makes precise prediction of climate change implications difficult (Rogelj et al., 2018).

Climate change is more than just global warming; thus, rising average temperatures are only one indicator of broader changes that include extreme temperatures, drought, flooding, storms, rising sea levels, effects on food production, and infectious diseases (Canadian Institute of Actuaries, 2015; Kurane, 2010; McMichael et al., 2008; Mora et al., 2020;

Rahman et al., 2014; Wu et al., 2016). The National Oceanic and Atmospheric Organization (2021) observed the effects of climate change on the world. Global temperatures climbed roughly 1.8°F between 1901 and 2020, and sea level rise has accelerated from 1.7 mm/year for much of the twentieth century to 3.2 mm/year since 1993. Moreover, glaciers are receding, with the average thickness of 30 well-studied glaciers decreasing by more than 60 feet since 1980, and the area covered by sea ice in the Arctic at the end of summer declining by roughly 40% since 1979. It was also discovered that the quantity of CO2 in the atmosphere has increased by 25% since 1958 and by approximately 40% during the Industrial Revolution. In the study of Weiskopf et al. (2020), it was also noted that climate change is a pervasive and rising global threat to ecosystems and biodiversity; shifts in productivity, species interactions, frailty to biological invasions, and other emergent properties are causing widespread changes in productivity, species interactions, vulnerability to biological invasions, and other emergent properties, altering the benefits and services that natural ecosystems can provide to society.

Climate change poses a great threat, but to address it, it is important to know what causes it. Literature suggests climate change is a result of many human activities such as deforestation (Butler, 2019; Morris, 2010), rapid population growth (Holdren & Ehrlich, 2019; Jianping et al., 2014), and pollution among others, but aside from climate change, these also have other consequences. According to The Human League (2022), deforestation disrupts ecosystems crucial to both wildlife and humans; lush green forests provide a home for numerous wild creatures as well as innumerable unique varieties of plants. Forests like the ocean, absorb excess atmospheric carbon dioxide, providing a much-needed buffer against irreversible climate change; nevertheless, if people continue to destroy forests at their current rate, forests may reach their breaking point. Meanwhile, Mittal and Mittal

(2013) explain that the consumption, overuse, and misuse of physical resources have increased dramatically as the human population has grown because the more people there are the greater the demands on natural resources. It was also asserted that to maintain the expanding population, forests are being destroyed at an alarming pace, many non-renewable resources are depleting due to unrestricted use of fuel and energy, and many parts of the world are suffering from food and water shortages. Along with these problems, there is resource depletion and biodiversity loss, waste production, and the degradation of natural habitats for human advantage. Pollution, on the other hand, causes a slew of issues. Dahms (2014) contends that marine debris, which signals water pollution, is an increasing worldwide issue that poses a hazard to a range of marine organisms via the toxic action of nanoparticles, particle ingestion, and entanglement. Plastics, the most frequent kind of marine debris that account for between 60 and 80% of all marine debris and more than 90% of all floating particles, are of concern since they may be consumed by a variety of marine species and perhaps transported throughout food webs, which would result to marine life endangerment and eventually extinction.

Similarly, air pollution causes substantial environmental issues such as acid rain, haze, ozone layer thinning, and eutrophication, all of which constitute a significant hazard to all living things, including people (Manisalidis et al., 2020). In the studies of Brook et al. (2004), Genc et al. (2012), and Hajirasouliha and Zabiegaj (2020), air pollution was explained to cause respiratory and cardiovascular illness, reproductive and central nervous system malfunction, and cancer, among other things. Ultrafine particles, such as those found in diesel exhaust emissions, are a major source of nanoparticles in urban environments, and it is these particles that have the potential to cause the most serious health effects; diesel exhaust exposure has both acute and chronic negative

effects on the cardiovascular system (Miller & Newby, 2020). Besides that, exposure to these particulate matters increases a person's risk of stress, depressive symptoms, and suicidal ideation, and has thus been shown to have effects on people's mental health (Kim et al., 2021).

Analyzing these phenomena, it is clear that humans are the main perpetrators. While it is true that the activities causing these situations are for their advantage, it is also noticeable that humans are the most negatively affected. Therefore, problems in the environment lead to problems encountered by humans indicating that there is a need to have these solved to ensure a sustainable future for humankind. As human activities are the cause of these emergencies, people must possess a positive attitude towards the environment, as well as a high level of engagement or involvement in environmental-friendly practices, not just to stop the destruction of ecosystems, but also to contribute to the conservation and sustainability of it. For this reason, the researchers have decided to conduct this study to determine the levels of environmental attitudes and behavior of people, starting with 392 tourism management students in selected colleges and universities in Region IV-A, Philippines, provided the fact that environmental conservation and ecotourism are courses included in their curriculum and most popular tourism attractions in the Philippines are nature-based, which are seen as a career option for these students in the future.

REVIEW OF LITERATURE

Grbac et al. (2013) discovered that visitors from the United Kingdom and the Netherlands, as well as those with higher incomes, had lower environmental views, whereas Russian tourists had stronger environmental attitudes. Moreover, persons with positive environmental views were more inclined to suggest the tourist place they visited to their friends and

relatives, while it was also shown that visitors who had a better overall experience of having value for money and higher overall happiness with their vacation have a more environmentally conscious mindset. Meanwhile, in research involving tourism students, Mckercher et al. (2012) discovered that students are typically worried about environmental degradation, feel informed about climate change, and are concerned that it will become an even greater issue in the next 5 years. They also recognize that tourism contributes significantly to carbon emissions, and as a result, 70% have adjusted their behavior in the last three years to lessen their environmental effect. However, understanding of the causes of climate change was limited, which is indicative of a general lack of comprehensive information about environmental deterioration, which translates into fairly generic behavior changes. Most notably, less than 13% of students have modified their holiday routines due to environmental concerns, with just a tiny minority planning to change their travel patterns in the future. Students at a Chilean university, on the other hand, have a positive attitude toward the environment, notably in terms of recycling, water, and energy usage (Heyl et al., 2013). Overall, the students have a good environmental attitude since they care about nature and are aware of the reasons for its deterioration; however, this is not reflected in their actions, notably in the regularity with which they engage in conservation-related activities and events. Abun and Racoma (2017) investigated people's environmental attitudes and behaviors with a focus on Catholic school staff in Ilocos Sur, Philippines. They discovered that these employees feel that nature only has significance when it helps humans' survival requirements and that they are unsure whether humans have authority over nature. Moreover, they lack understanding of how to respect and use nature, as well as knowledge of environmental difficulties and the dangers they may face in the future, resulting

in an undetermined degree of personal conservation intention and likelihood of their actions.

Through rigorous search in open access journals, it is noticeable that there are several studies conducted in the area of environmental conservation and sustainability, particularly on people's attitudes and behavior, however, though environmental attitudes and behavior of people have been broadly examined by several researchers, there is still a scarcity of studies that have involved certain groups; there is a dearth of studies that have explored Filipino tourism management students' environmental attitude and behavior. Moreover, the studies available that were conducted in the Philippines have only focused on one institution at a time, limiting the information it has provided, thus, creating the need to do a study on a larger scope. Hence, a research gap that this study has attempted to fill.

METHODOLOGY

Guided by a descriptive correlational research design and incorporating a quantitative research approach, the researchers were able to gather, analyze, and interpret data for this study. Tourism management students of 4 colleges and universities in Region IV-A, Philippines, two of which are State Universities, while the other two are Private Colleges have been selected to be the subject of this study since Environmental Conservation and Ecotourism are courses included in the curriculum of the Bachelor of Science in Tourism Management Program, and the fact that most popular tourism attractions in the Philippines are nature-based.

Objectives

The researchers have attempted to accomplish the following specific research objectives:

1. To determine the environmental attitude (EA) and behavior (EB) of tourism management students in selected higher education institutions in Region IV-A, Philippines in terms of solid waste management, energy and water consumption, transportation, purchase and use of products, and actual participation.
2. To determine the relationship between the environmental attitude (EA) and behavior (EB) of tourism management students.
3. To determine what age group, sex group, and students enrolled in certain types of institutions have a more positive and negative environmental attitude and a higher and lower level of environmental engagement compared with other groups.

Methods

To measure the levels of environmental attitude and behavior, a four-point scale was used: 1-Strongly Agree, 2-Agree, 3-Disagree, and 4-Strongly Disagree. Frequency and percentage were computed to classify respondents in terms of their demographic profile, mean scores were computed to measure their environmental attitude and behavior and to understand the significant relationship between their environmental attitude and environmental behavior, Spearman's Rho Correlation was performed.

Tools

The research instrument used was created based on the types of questions used by two studies; it was first inspired by the study instrument of Abun and Racoma (2017), where some questions were taken from, and adapted from the study of Heyl et al. (2013), where the variables suggested to measure environmental attitude and behavior were used. It is a survey

composed of 38 questions, 2 of which are asked to determine the respondents' demographic profile, 18 are designed to learn about their level of environmental attitude, and the other 18 are for their environmental behavior, which was distributed via Google Forms.

Population

Out of the total population of 955 Students enrolled in the Bachelor of Science in Tourism Management program offered by the selected Higher Education Institutions, the sample size using Slovin's formula was computed with a 5% margin of error and a 99% confidence level, while the exact numbers of student-respondents needed from each educational institution were computed based on their percentage contribution to the total population aforementioned. Respondents were randomly selected through a fishbowl draw method.

Table 1

Breakdown of the total number of Bachelor of Science in Tourism Management Students enrolled in the selected Higher Education Institutions

Higher Education Institution (HEI)	Number of Tourism Management Students	1st Year	2nd Year	3rd Year	4th Year
HEI A	217	59	55	46	57
HEI B	259	74	80	33	72
HEI C	391	144	150	59	38
HEI D	88	37	26	8	17
Total Population	955	314	311	146	184

Table 2

Breakdown of the total number of respondents based on the computation of the sample size and percentage contribution of each Higher Education Institution

Higher Education Institution (HEI)	Sample Size per HEI	1st Year	2nd Year	3rd Year	4th Year
HEI A	90	25	22	20	23

HEI B	106	31	33	14	28
HEI C	161	60	61	24	16
HEI D	35	15	10	3	7
Total Sample	392	131	126	61	74

RESULTS

The students strongly disagree (Table 3) that there is no need for each household to segregate their waste, with a mean score of 3.33, while they disagree that people do not need to reuse products such as plastic cups, plastic bottles, plastic bags, cans, and papers, and they just need to dispose it right after use, and people do not need to recycle things such as but not limited to shampoo sachets, papers, rubber, and cans, and they must dispose it right away, with mean scores of 3.01 and 2.87 respectively. These indicate that the majority of tourism management students understand how important solid waste management is in conserving the environment.

Table 3

Respondents' environmental attitude in terms of solid waste management (SWM)

Statements	Mean	Descriptive Meaning
I believe that there is no need for each household to segregate their waste	3.33	Strongly Disagree
I think that people do not need to reuse products such as plastic cups, plastic bottles, plastic bags, cans, and papers, and they just need to dispose it right after use	3.01	Disagree
I believe that people do not need to recycle things such as but not limited to shampoo sachets, papers, rubber, and cans, and they must dispose it right away.	2.87	Disagree

The students strongly disagree that leaving appliances plugged in does not have any impact on the environment and that leaving a light on, and a cell phone charger plugged in if it's not being used is okay, with mean scores of 3.39 and 3.35 respectively, while they disagree that people may not save electricity as long as they could pay for it, with a mean of 3.25, which indicate that these students believe that responsible

utilization of energy resources plays a critical role in environmental conservation (Table 4).

Table 4

Respondents' environmental attitude in terms of energy consumption (EC)

Statements	Mean	Descriptive Meaning
I think that leaving appliances plugged in do not have any impact to the environment	3.39	Strongly Disagree
I do not believe that people must save electricity as long as they could pay for it	3.25	Disagree
I believe that leaving a light on, and a cell phone charger plugged in if it's not being used is okay	3.35	Strongly Disagree

The students strongly disagree that it is fine to let the water run and wait for it to get warm before taking a bath and that people must not be obliged to save water as long as they can pay for it, with mean scores of 3.32 and 3.39 respectively, while they disagree that it is fine to open the faucet in max, while they are washing their hands to wash it thoroughly and to avoid leaving any soap on it, with a mean of 3.13 (Table 5). This could mean that they fully understand that responsible consumption of water is a must to save the environment.

Table 5

Respondents' environmental attitude in terms of water consumption (WC)

Statements	Mean	Descriptive Meaning
I believe that it is fine to let the water running and wait for it to get warm before taking a bath	3.32	Strongly Disagree
I think it is fine to open the faucet in max, while I am washing my hands to wash it thoroughly and to avoid leaving any soap on it	3.13	Disagree
I believe that people must not be obliged to save water as long as they could pay for it	3.39	Strongly Disagree

The students disagree that they prefer riding a motorcycle/tricycle when going to a nearby place than riding a bicycle or walking and that it is fine for car/ vehicle owners to leave their vehicles' engine running while it's parked, to maintain the coolness inside, especially if they are just waiting

for someone, with mean scores of 2.75 and 3.14 respectively, while they agree that they prefer riding a personal vehicle (cars, motorcycle) than public transport when traveling, with a mean of 2.14 (Table 6). Although generally speaking the students have a positive attitude in terms of transportation, these results show that some have double standards, particularly when considering convenience over environmental conservation.

Table 6
Respondents' environmental attitude in terms of transportation (Tr)

Statements	Mean	Descriptive Meaning
I prefer riding a personal vehicle (cars, motorcycle) than public transport when travelling.	2.14	Agree
I prefer riding a motorcycle/tricycle when going to a nearby place than riding a bicycle or walking.	2.75	Disagree
I think that it is fine for car/ vehicle owners to leave their vehicles' engine running while it's parked, to maintain the coolness inside, especially if they are just waiting for someone.	3.14	Disagree

The students disagree that single-used materials like shampoo sachets, cotton buds plastic sticks, plastic and styro plates, balloons, and plastic straws are not major contributors to pollution (2.82), that buying and using aerosol sprays are okay to maintain a pleasant odor in my home/room (2.60), and that the functionality of a product based on the need of people is more important than its environmental consequences with a mean of 2.98 (Table 7).

Table 7
Respondents' environmental attitude in terms of purchase and use of products (PUP)

Statements	Mean	Descriptive Meaning
I reject the idea that single-used materials like shampoo sachets, cotton buds plastic sticks, plastic and styro plates, balloons, and plastic straws are the major contributors to pollution	2.82	Disagree
I think that buying and using aerosol sprays are okay to maintain a pleasant odor in my home/room	2.60	Disagree

I think that the functionality of a product based on the need of people is more important than its environmental consequences	2.98	Disagree

The students strongly disagree that people's participation in environmental practices and programs is not needed, because it is the job of the government and other concerned private organizations, and that it is not necessary for them to discuss environmental conservation and sustainability with their friends, family, and community, because it is not their responsibility, with mean scores of 3.27 and 3.29 respectively, while they disagree that not all people must be a part of environmental organizations as it depends if their field of specialization is environmental management with a mean of 3.07 (Table 8).

Table 8

Respondents' environmental attitude in terms of actual participation (AP)

Statements	Mean	Descriptive Meaning
I believe that people's participation in environmental practices and programs is not needed, because it is the job of the government and other concerned private organizations.	3.27	Strongly Disagree
I think that it is not necessary for me to discuss environmental conservation and sustainability with my friends, family, and community, because it is not my responsibility.	3.29	Strongly Disagree
I believe that not all people must be a part of environmental organizations; it depends if their field of specialization is environmental management	3.07	Disagree

The students disagree that they only use some non-biodegradable materials once, even though they know that they could use them again, such as plastic bottles, plastic bags, cans, and plastic containers, etc, with a mean score of 2.54, however, they agree they often forget to separate non-biodegradable and biodegradable wastes (2.43) and that they often do not recycle trash, such as shampoo sachets, papers, rubber, and cans (2.39). Results indicate poor practice of solid

waste management among tourism management students (Table 9).

Table 9

Respondents' environmental attitude in terms of solid waste management (SWM)

Statements	Mean	Descriptive Meaning
I often forget to separate non-biodegradable and biodegradable wastes.	2.43	Agree
I only use some non-biodegradable materials once, even I know that I could use it again, such as plastic bottles, plastic bags, cans, and plastic containers, etc.	2.54	Disagree
I often do not recycle trash, such as shampoo sachets, papers, rubber, and cans. I just dispose it right away after use.	2.39	Agree

The students disagree that they always forget to unplug appliances and other things such as cellphone chargers after use, with a mean of 3.00, they tend to leave electric fans, lights, and television on most of the time, and that often spend time alone separated from my family and use electricity, with mean scores of 3.18 and 2.64 respectively (Table 10). These mean that these students religiously observe environmental conservation practices particularly those that fall under energy consumption, however, the reason for doing it is yet to be determined, as they may only be doing it to take good care of their devices and appliances among others.

Table 10

Respondents' environmental attitude in terms of energy consumption (EC)

Statements	Mean	Descriptive Meaning
I always forget to unplug appliances and other things such as cell phone charger after use	3.00	Disagree
I tend to leave electric fans, lights, and television on, most of the time	3.18	Disagree
I often spend time alone separated from my family and use electricity. Example: You are in your room most of the time using your own electric fan/air conditioner, and cell phone, while other members of the family are in the living room watching television or doing something else	2.64	Disagree

The students strongly disagree that they often forget to turn off the faucet after using it with a mean score of 3.34, while they disagree that they let the water run for a couple of minutes or until it gets warm before taking a bath, and that when they wash their hands, the dishes, or anything using a faucet, they often open it at maximum, with mean scores of 3.08 and 2.87 respectively (Table 11).

Table 11

Respondents' environmental attitude in terms of water consumption (WC)

Statements	Mean	Descriptive Meaning
Before I take a bath, I let the water running for a couple of minutes or until it gets warm.	3.08	Disagree
When I wash my hands, the dishes, or anything using a faucet, I often open it at maximum.	2.87	Disagree
I often forget to turn off the faucet after using it.	3.34	Strongly Disagree

The students disagree that they use their personal or their family's vehicle (Car/Motorcycle) more often than (Table 12) going on public transportation when they travel (2.55), they ride a motorcycle or a tricycle, more often than walking or riding a bicycle (2.79), and they usually tolerate themselves and drivers of public utility vehicles leaving the engine running even it is parked (3.10).

Table 12

Respondents' environmental attitude in terms of transportation (Tr)

Statements	Mean	Descriptive Meaning
When I travel, I use my personal or my family's vehicle (Car/Motorcycle) more often than going on public transportation.	2.55	Disagree
When I go to a near place, I ride my motorcycle or a tricycle, more often than walking or riding a bicycle.	2.79	Disagree
When I travel using my motorcycle/car, I usually let the engine running even it is parked. / When I am commuting, it is fine for me if the driver keeps the vehicle's engine running while waiting for passengers in the terminal/parking area.	3.10	Disagree

The students disagree that they buy and use aerosol sprays with a mean of 2.54, but they agree that they often buy and use products that utilize single-use plastics such as shampoo sachets, candies, junk foods, cotton buds with plastic sticks, disposable plates, and plastic bags (2.44), and they choose products based on needs, and they often do not check if it contains chemicals that are harmful to the environment (2.48). These results indicate that when purchasing products, environmental conservation is not the students' priority, which is the opposite of their environmental attitude. These also show that they have double standards given that they tend to reject products that cause air pollution, but support those that cause other types of pollution when not properly managed such as single-use plastics that pollute our seas (Table 13).

Table 13

Respondents' environmental attitude in terms of purchase and use of products (PUP)

Statements	Mean	Descriptive Meaning
I often buy and use products that utilize single-use plastics such as shampoo sachets, candies, junk foods (chichirya), cotton buds with plastic sticks, disposable plates (styro & plastic), and plastic bags.	2.44	Agree
I buy and use aerosol sprays (examples are Glade, Lysol, including deodorant sprays).	2.54	Disagree
When I buy products, I choose products based on needs, and I often do not check if it contains chemicals that are harmful to the environment.	2.48	Agree

The students disagree (see Table 14) that they rarely discuss the environment with their friends, family, and community, and they often do not do environmentally friendly practices like recycling, waste segregation, and donating to environmental organizations, among others, because it is the government's responsibility, with mean scores of 2.52 and 3.00 respectively, but they agree that they are not a member of an environmental organization/group (2.32).

Table 14

Respondents' environmental attitude in terms of actual participation (AP)

Statements	Mean	Descriptive Meaning
I am not a member of an environmental organization/ group.	2.32	Agree
I rarely discuss about the environment with my friends, family, and community.	2.52	Disagree
I often do not do environmentally friendly practices like recycling, waste segregation, donating to environmental organizations, etc., because it is the government's responsibility.	3.00	Disagree

In terms of solid waste management, students who are 19 years and below, 20-21, and 22-23 possess a positive attitude, and those who are 24-25 and 26 years old and above have a very positive attitude. Meanwhile, all age groups have a very positive attitude towards energy and water consumption, except those students that are 22-23 who only have a positive attitude. In terms of transportation, all groups have positive attitudes, while only 19 and below, 20-21, 22-23, and 24-25 years old have positive attitudes in the context of purchase and use of products, as those students that are 26 years old and above possess a negative attitude. Lastly, when it comes to the student's attitude on actual participation in environmental practices and programs, 20-21, 24-25, and 26-year-olds and above are very positive, while those 19 below and 22-23-year-olds only possess positive attitudes. It is also clear that students who are 26-year-olds and above have a more positive attitude in terms of solid waste management, water consumption, transportation, and actual participation, while when it comes to energy consumption, those who are 24-25 and 26 years old above have the more positive attitude, and in terms of purchase and use of products, 24-25 years old students possess the more positive attitude (Table 15).

Table 15
Respondents' environmental attitude based on their age

Age	SWM	EC	WC	Tr	PUP	AP
19 and below	3.01	3.33	3.28	2.66	2.72	3.16
20-21	3.16	3.37	3.32	2.70	2.88	3.28
22-23	2.90	3.16	3.14	2.61	2.76	3.10
24-25	3.50	4.00	3.67	2.83	2.83	3.33
26 and above	4.00	4.00	4.00	3.00	2.00	4.00

Students who are 24-25 and 26 years old and above possess a high level of engagement in solid waste management practices, while those 19 and below, 20-21, and 22-23 years old have a low level of engagement. In terms of energy and water consumption practices, students that are 24-25 and 26 years old and above have a very high level of engagement, while the rest only possess a high level of engagement. Meanwhile, all groups recorded a high level of engagement in terms of transportation except those who are 24-25, which have a very high level of engagement, while in regards to purchase and use of products, all groups have a high level of engagement, except for students that are 22-23 who possess a low level of engagement. Lastly, students in all age groups have a high level of engagement in terms of their actual participation in environmentally friendly practices. It is also noticeable that students who are 26 years and above have the highest level of engagement among all groups in terms of solid waste management, energy and water consumption, and actual participation, while those who are 24-25 years old have the highest level of engagement in terms of transportation, and both aforementioned groups in the context of purchase and use of products (Table 16).

Table 16
Respondents' environmental behavior based on their age

Age	SWM	EC	WC	Tr	PUP	AP
19 and below	2.44	2.92	3.04	2.76	2.36	2.89
20-21	2.49	2.96	3.17	2.87	2.59	2.99
22-23	2.38	2.89	2.96	2.73	2.44	2.83

24-25	2.83	3.33	3.67	3.33	3.00	2.83
26 and above	3.00	4.00	4.00	3.00	3.00	3.00

Students that are 26 and above possess the most positive environmental attitude and the highest level of engagement, though those that are 24-25 also have very positive attitudes compared with other groups. Meanwhile, even though, they have positive environmental attitudes and a high environmental practices engagement, students that are 22-23 years old have recorded the lowest mean scores in both categories. Additionally, it is also clear that the environmental behavior of the students compared to their environmental attitude is lower, in fact, it is most noticeable among students that are 24-25 years old as despite having a very positive environmental attitude; they only have a high level of environmental-friendly practices engagement (Table 17).

Table 17

Respondents' overall environmental attitude and behavior when grouped in terms of age

Age	Overall Mean (Attitude)	Attitude Interpretation	Overall Mean (Behavior)	Behavior Interpretation
19 and below	3.03	Positive	2.74	High Engagement
20-21	3.12	Positive	2.85	High Engagement
22-23	2.95	Positive	2.71	High Engagement
24-25	3.36	Very Positive	3.17	High Engagement
26 and above	3.50	Very Positive	3.33	Very High Engagement

Female students have a very positive attitude towards energy and water consumption, and actual participation, while only possess a positive attitude in terms of solid waste management, transportation, and purchase and use of products. Meanwhile, male students have positive attitudes in all areas, except in transportation, and purchase and use of products where they have a negative attitude. Moreover, it is also clear that female students have more positive attitudes than males across all areas (Table 18).

Table 18
Respondents' environmental attitude based on sex

Sexuality	SWM	EC	WC	Tr	PUP	AP
Female	3.14	3.43	3.36	2.74	2.90	3.31
Male	2.80	2.95	2.97	2.40	2.42	2.83

Female students have a high level of engagement in terms of energy and water consumption, transportation, purchase and use of products, and actual participation, however, have low engagement in terms of solid waste management practices. Meanwhile, male students high level of engagement in terms of energy and water consumption, transportation, and actual participation, while only have a low level of engagement in terms of solid waste management, and purchase and use of products. It is also noticeable that female students have a higher level of engagement than males across all areas (Table 19).

Table 19
Respondents' environmental behavior based on sex

Sexuality	SWM	EC	WC	Tr	PUP	AP
Female	2.48	2.98	3.13	2.87	2.52	3.00
Male	2.38	2.79	2.95	2.62	2.37	2.65

Female and male students both have positive environmental attitudes and a high level of engagement in environmental-friendly practices, however, female students recorded higher mean scores in both categories, indicating that they have more positive environmental attitudes and a higher level of environmental behavior. It is also noticeable that the environmental behavior of both groups compared to their environmental attitude is lower (Table 20).

Table 20
Respondents' overall environmental attitude and behavior when grouped in terms of sex

Sexuality	Overall Mean (Attitude)	Attitude Interpretation	Overall Mean (Behavior)	Behavior Interpretation

Female	3.15	Positive	2.83	High Engagement
Male	2.73	Positive	2.63	High Engagement

Students that are enrolled in public institutions possess a positive attitude in terms of all aspects, except in energy and water consumption where they have recorded a very positive attitude. Meanwhile, students who are studying in private institutions have a positive attitude in all aspects, except in energy consumption where they possess a very positive attitude. It is also noticeable that students from public institutions have a more positive attitude than those from private institutions across all areas (Table 21).

Table 21

Respondents' environmental attitude based on the type of institution they are enrolled at

HEI Type	SWM	EC	WC	Tr	PUP	AP
Private	2.97	3.28	3.24	2.61	2.75	3.17
Public	3.16	3.38	3.32	2.74	2.85	3.24

Students who are enrolled in public institutions have a high level of engagement in terms of all aspects, except in solid waste management practices where they have a low level of engagement. The same is the case for students studying in private institutions. It is also noticeable that students from public institutions have a higher level of engagement than those from private institutions across all areas (Table 22).

Table 22

Respondents' environmental behavior based on the type of institution they are enrolled at

HEI Type	SWM	EC	WC	Tr	PUP	AP
Private	2.41	2.91	3.06	2.73	2.42	2.92
Public	2.50	2.97	3.13	2.90	2.55	2.94

Students enrolled in public and private institutions both have positive environmental attitudes and high levels of engagement in environmental-friendly practices, however, female students recorded higher mean scores in both

categories, indicating that they have more positive environmental attitudes and a higher level of environmental behavior. It is also noticeable that the environmental behavior of both groups compared to their environmental attitude is lower (Table 23).

Table 23
Respondents' overall environmental attitude and behavior when grouped base on the type of institution they are enrolled

HEI Type	Overall Mean (Attitude)	Attitude Interpretation	Overall Mean (Behavior)	Behavior Interpretation
Private	3.00	Positive	2.74	High Engagement
Public	3.12	Positive	2.83	High Engagement

Overall environmental attitude and behavior of tourism management students

Tourism management students have very positive attitudes in terms of energy and water consumption, while they only possess a positive attitude in terms of solid waste management, transportation, purchase and use of products, and actual participation. In regards to their environmental behavior, these students have a high level of engagement in environmental-friendly practices in terms of energy and water consumption, transportation, and actual participation, however, have a low level of engagement in the purchase and use of products, and solid waste management practices. It is also noticeable that the student's behavior is lower compared to their attitude across all areas except in terms of transportation (Table 24).

Table 24
Respondents' environmental attitude and behavior in all variables

Variables	EA	Attitude Interpretation	EB	Behavior Interpretation
SWC	3.07	Positive	2.46	Low Engagement
EC	3.33	Very Positive	2.94	High Engagement

WC	3.28	Very Positive	3.10	High Engagement
Tr	2.67	Positive	2.81	High Engagement
PUP	2.80	Positive	2.49	Low Engagement
AP	3.21	Positive	2.61	High Engagement

Tourism management students have a positive environmental attitude and a high level of environmental behavior that translates to a high level of engagement in environmental-friendly practices. It is also clear that the level of environmental attitude the students have is higher than their environmental behavior (Table 25).

Table 25

Respondents' concluding environmental attitude and behavior

Statement	EA	Attitude Interpretation	EB	Behavior Interpretation
Environmental attitude and behavior of Tourism Management students in selected HEIs in Region IV-A, Philippines	3.06	Positive	2.74	High Engagement

Using Spearman's Rho correlation, it was determined that there is no significant relationship between the students' environmental attitude and environmental behavior (Table 26).

Table 26

Relationship between the students' environmental attitude and environmental behavior using Spearman's Rho correlation

Variables	*N*	*df*	*SD*	*R-score*	*P-value*	Interpretation
Environmental Attitude Environmental Behavior	392	0.05	1.87	0.54286	0.2657	Not Significant

CONCLUSIONS

Based on the results presented, the researchers were able to determine that tourism management students in Region IV-A, Philippines have the most positive attitude and highest level of engagement in terms of energy and water consumption as they strongly believe that leaving appliances plugged has a negative implications to the environment and that people must limit the

use of electricity even they could afford it. They are also against the notion of leaving lights on, and cell phone chargers and cords plugged when not in use. Moreover, they strongly believe that it is never acceptable to let water run when not in use, as well as the notion of opening faucets at maximum when being used. Tourism Management students also think that people must limit the use of water even if they can afford it, and all of these translate into their practices. The students' environmental behavior, particularly in terms of solid waste management, purchase and use of products, and actual practices, on the other hand, recorded low scores. They often forget to segregate their solid wastes, and they do not recycle even those wrapped in single-use plastics. This is even though they often buy and use products that utilize single-use plastics such as shampoo sachets, candies, junk foods, cotton buds with plastic sticks, disposable plates, and plastic bags among others. Sadly, they are also not affiliated with any organization concerned with the environment, and they tend to purchase products based on their needs without checking whether such products contain chemicals that are harmful to the environment or do not.

When grouped according to their demographic profile, it was found that students that are 26 years old and above, female, and studying in public institutions possess a more positive attitude and behavior towards environmental practices in terms of solid waste management, energy and water consumption, and actual practices, while in terms of transportation and purchase and use of products, these groups of students only have the highest level of engagement. Meanwhile, those who are 24-25 years old, female, and enrolled in public institutions have the highest level of engagement on environmental practices in the area of transportation, and students that are 20-21 years old, female, and from public institutions possess the most positive environmental attitude in terms of purchase and use of

products. Overall, 26 years old and above, females, and students studying in public institutions have more positive environmental attitudes and a higher level of engagement in environmental-friendly practices compared to their counterparts.

Tourism Management students in Region IV-A, Philippines possess a positive environmental attitude and a high level of engagement in environmental-friendly practices, however, their environmental behavior, in general, is lower than their environmental attitude, in fact, based on the results of Spearman's Rho Correlation, there is no significant relationship between the students' environmental attitude and environmental behavior, which indicates that their attitude towards the environment is different from their actual behavior. The students could not translate what they had in mind into actual practice, hence, a problem that must be addressed.

Recommendations

From the conclusions, the following recommendations were made:

- Environmental awareness with heavy emphasis on negative implications of human activities on global and smaller scales must be incorporated in all tourism major subjects that involve planning and development, and not just in environmental conservation in tourism and ecotourism, so students would realize the importance of not doing things that could harm nature and taking actions for the planet. Moreover, the students have great environmental attitude, however, it does not translate into practice in general, thus, topics and activities that focus on actual experience is a must such as but not limited to tree planting, proper waste segregation, recycling, and participation in programs organized by environmentally inclined organizations.

- Single-used plastics are one of the major pollutants in the planet, so it is important that the students learn about this. The topics discussed involving environmental conservation and sustainability must give emphasis on the deeper consequences of the continuous production and disposal of single-used plastics, and not just on what is obvious. Discussions about this must be scientific, deep, and focused on long term effects, so it would be more effective in influencing students. This is critical because it is clear from the results that they do not recycle despite the frequent buying and using of products that utilize single-used plastics such as shampoo sachets, candies, junk foods, cotton buds with plastic sticks, disposable plates, and plastic bags, among others.
- Male students must be exposed more to discussions about the environment since their environmental attitude and behaviour were consistently lower than of female's. Likewise, students studying in private institutions compared to those from public institutions. The management of private colleges and universities must include the environment and ecotourism in students' learning priority areas, while the management of public institutions are recommended to continue what they have been doing in the area of environmental conservation to maintain the positive attitude and high level of engagement possessed by their tourism management students.
- Since the tourism management students are not affiliated to any environmentally inclined organization, the researchers hereby recommend the establishment of at least one student organization in each college and university in the Philippines that focuses on this area. This would help in spreading environmental awareness, and policy implementation, which could transform

campuses into a more environmental-friendly place that could consequently motivate students to be more environmentally inclined.

- Policies on environmental protection, preservation, and conservation must be reviewed aligned with the curricular program to ensure holistic and strong implementation as it may have effects to the attitude and behavior of students towards sustainable development.

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