

## **Measuring Environmental Attitude and Environmental Behavior of Senior High School Students of Divine Word Colleges in Region I, Philippines**

*Damianus Abun, PhD, Faculty of the College of Business Administration of the Divine Word College of Vigan, Ilocos Sur, Philippine*

*Fredrick Aguot, MAME, Faculty of the College of Education, Divine Word College of Vigan, Ilocos Sur, Philippine*

### *Abstract*

The study was motivated by the realities of climate change and its effect on the human life. The study argues that environmental problems are caused by human attitude toward environment and such attitude affects environmental behavior. In order to support such theory, the literature and studies were reviewed. The data gathered through questionnaires and 400 students were given the questionnaires. The descriptive correlational study was utilized to determine the extent of the correlation between environmental attitude and environmental behavior of the Senior High School Students of Divine Word Colleges in Region I, Philippines. The study revealed that anthropocentric attitude and eco-centric attitude were found to be dominant among students. However, the correlation was found only between eco-centric attitude and environmental behavior along environmental movement activism and personal conservation behavior, while anthropocentric and human dominance over nature attitude do not correlate to the environmental behavior.

*Keywords: Environmental behavior, environmental attitude, anthropocentric, eco-centric, human dominance over nature, environmental movement activism, personal conservation behavior.*

Chapter I: The Problem

### **Rationale**

Environmental problems have become a serious concern of all human being on the planet. Why is it becoming serious concern? People have seen the connection between the environmental disaster and quality of human life. Quality of life has been affected by climate change. EPA (2016) mentions several impacts of climate change such as the increase of warming temperatures, changes in precipitation, and increases in the frequency of extreme weather events and the rising of sea levels. As a result, these affect the food that we eat, water we drink, the air we breathe, and the weather we experience. WHO (2016) estimated and predicted that between 2030 and 2050, the climate change is expected to cause approximately 250,000 additional deaths per year from malnutrition, diarrhea and heat stress. Such prediction causes alarm and immediate action. It cannot be ignored but it has to be solved but the question here is how can we solve it

and where do we start to solve the problem? Understanding the root cause of the problem is necessary for us to apply the correct solution to the environmental problem.

Many activities or programs have been initiated or introduced by the government and non-government agencies in order to address the climate change, global warming to prevent further deterioration of climate or global warming. Projects on tree planting and solar power have been done. However, not all people are planting trees and having a solar energy, instead of using ordinary fossil oil. People in other parts of the world are still cutting trees and mining which causes the decrease of water resources. Current conservation practices do not address the root causes of the problem. Some countries understand and feel the importance of reducing the climate change particularly the developed countries, while some countries do not see and feel the importance of reducing global warming, take the example of developing countries such as Asia and Africa. They are still after the industrialization of their countries and elevation of poverty. It seems the urgency is not felt by all.

Solving climate change problems become uncertain is also because of misunderstanding of the cause of climate change. A disturbing statement came from Scott Pruitt; the appointed head of EPA under President Donald Trump, as quoted by Daily Inquirer (2017) argued that CO<sub>2</sub> is not global warming cause. Such statement goes against the scientific consensus that underpins Paris Agreement which more than 190 world leaders agree to lower emissions that lead to global warming. Misunderstanding on the cause of global warming causes a sporadic response to global climate change. The responses to climate change are not based on common consensus and mostly not based on the systematic and scientific study.

The current study would argue that solution of climate change problems should start from understanding the root cause of the problem. It is a fact that environmental problem is caused by human behaviors. If we go further, human behavior is caused by attitude or views toward certain object. If the person sees the object negatively or positively, it will affect the way how she/he relates to that object. Therefore, there can be several kinds of behaviors toward a certain object depending on the attitudes or views of the person toward that object. Those behaviors can be: respect, love, care or dominate, control or destroy. Going along with such argument, it is necessary that in order to solve environmental problems reviewing human attitude toward environment is a necessary. The concern here is: do human beings understand the environment value? What is particular attitude influencing human behavior toward environment? That is the purpose of the study, to find out the level of attitude toward environment and how they behave toward environment. This is to determine if attitude toward environment really affects human behavior toward environment and what particular attitude that has more influence toward environmental behaviors.

### **The Purpose of the Study**

The study is to determine the level of understanding and attitude of Senior High School Students of Divine Word Colleges in Region I, Philippines, and measure the effects of such understanding and attitude toward the environmental. Consequently the result will be used for educational purposes to improve environmental awareness of the students and consequently used for curriculum development on the environment. We believe that global warming is anthropocentric global warming; it is caused by human behavior. Human beings have been thinking only of themselves as center of the universe and looking at things around them as secondary, not important, except only if they serve the needs of human beings. Environmental consequences of such kind of attitude are disastrous. The increase of weather temperature is getting uncontrollable, getting hotter every year. Thus the solution to reduce the global warming is going back to human beings themselves. Revisiting again their attitudes and their behaviors toward the environment would help determine the solution to mitigate the environmental impact of human behaviors. By pointing out the relationship between human attitudes and human behaviors toward environment, the students are expected to review again their attitudes toward environment and hopefully change their behavior into friendly environmental behaviors. Improving environmental attitudes and environmental behaviors of the students will definitely bring some positive effects toward the students 'environmental attitude and behaviors. It is expected that the teachers will teach their students on how to see and to behave toward the environment. Environmental education aims to improve environmental attitudes of students toward the environment.

The study is not to problematize the role of anthropology and psychology in defining human behavior. The study just focuses on measuring the effect of human attitudes and environmental behaviors. It does not question whether human behavior is within the domain of psychology or anthropology. This study argues that behavioral changes usually happen when there are threats, fear, benefits, and attitudes. Thus consequently, the purpose of the study is to raise the awareness of the students about the real danger of global warming and the fear for future generation. At the same time the study raises a hope about the benefits if human beings change their attitude and behavior toward the environment. That is the final end of this study, to change attitude and behavior toward the environment.

## **Theoretical Framework**

### **Culture and Attitude and Behavior**

The anthropologists argue that the behavior of a person can tell many hidden things because through his/her behavior people can see what his culture is. The behavior is a product of culture. People who are coming from different cultural background will have different behaviors because they have different views or attitudes toward things or events around them. That is the power of culture. Culture is a means of explaining how one group of people behaves and another doesn't. Culture shapes the mind and the way how people think. Therefore culture does matter quite a bit on how we behave and how we think. According to Donald (2002) that culture has a

significant influence on our brain functioning and even brain structure. She holds that language has the biggest impact on brain structure but that culture influences brain functioning to a great extent as she writes:

The social environment includes many factors that impinge on development, from bonding and competitive stress to the social facilitation of learning. These can affect brain functioning in many ways, but usually they have no direct influence on functional brain architecture. However, symbolizing cultures own a direct path into our brains and affect the way major parts of the executive brain become wired up during development. This is the key idea behind the notion of deep enculturation... This process entails setting up the very complex hierarchies of cognitive demons (automatic programs) that ultimately establish the possibility of new forms of thought. Culture effectively wires up functional subsystems in the brain that would not otherwise exist.

Such idea just indicates a powerful influence of culture over the formation of mind and ideas of people about everything around them. Donald's view is somehow related to what Geert Hofstede as cited by Brown (1995). Geert Hofstede argued that culture is the collective programming of the human mind that distinguishes the members of one human group from those of another. Hofstede points out that culture is reflected in how people think, how people view things or attitude. We can distinguish people and their culture by just simply reading their attitude. Supporting such line of thought, Amstrong (1996) suggests that there is a relationship between cultural dimensions such as Uncertainty Avoidance and Individualism as prescribed by Hofstede's cultural dimensions and ethical perceptions. In other words, ethical perceptions of people vary depending on their cultural background. This finding supports the hypothetical linkage between the cultural environment and the perceived ethical problem variables posited in Hunt and Vitell's General Theory of Marketing Ethics (1986). Their theory indicates that there is relationship between culture and ethical problems. The views and the values of people are formed by their cultural background. Example, one may say that bribery is immoral but another say that bribery is good.

In functionalist thinking, culture is considered a component of an integrated social system which promotes the effectiveness of the organization and the well-being of all its stakeholders. The functionalists refer culture as assumptions, beliefs, goals, knowledge and values that are shared by members of the society. British anthropologist Edward Burnett Tylor (1874 as cited by Racelis 2009) defined culture inclusively. He described culture as "*complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society*". Culture represents "ideal factors" in a system that exerts significant and partly independent influence on human events or human behaviors. When an individual is faced with an ethical dilemma, his or her value system will color the perception of the ethical ramifications of the situation. He/she will deal with ethical issues based on how he/she understood the issue which is very much influenced by the culture.

The theories that we have just cited above indicate that culture affects the way how people think, the way how people perceive things, affect their attitudes, their values, their beliefs and their behaviors. Similarly, another important factor that contributes to human behavior is their “core faith”. This faith can be through religion, philosophy and personal belief and it often affects the way a person can behave. Many people believe some sort of belief in a higher power, which makes religion a large importance in society (Nones, 2012). It is only natural for something that plays such a large role in society to have an effect on human behavior (Spilka, 1996). Morals are another factor that affects the way a person behaves. Emotions connected to morals including shame, pride, and discomfort and these can change the way a person acts. Most importantly, shame and guilt have a large impact on behavior (Tangney, 2007).

We come to a point to accept the reality that culture highly affects human behavior. Culture can become good instrument for human development and it can also cause destruction for human development. Societies problem are originated from wrong views or attitude. The beliefs of certain cultures, faith, values, and practices are taught to children from such a young age that they are greatly affected as they grow up. These beliefs, faith, values and practices are taken into consideration throughout daily life when they interact with people and even with the environment, which leads to people from different cultures acting or behaving differently. These differences are able to alter the way different cultures and areas of the world interact and act (Triandis, 1994). Triandis argues that culture does not only affect the belief and values of people but it also affects their attitude. It appears to be seen as the culture affects the attitude and attitude affects the behavior of a person. An attitude is an expression of favor or disfavor toward a person, place, thing, or event (Wyer, 1965). In this case, attitude does not only affect the behavior of a person to another person but it can also affect his/her behavior toward things or environment.

The interesting thing about an attitude and human beings is that it alters between each individual. Everyone has a different attitude towards different things. A main factor that determines attitude is likes and dislikes. The more one likes something or someone the more one is willing to open up and accept what they have to offer. When one doesn't like something, one is more likely to get defensive and shut down. Attitudes have a lot to do with the mind, attitude which highly relates to human behavior. The way a human behave will depends a lot on how they look at the situation and what they expect to gain from it (Kecmanovic, 1969). One can choose to be positive or to be negative. Positive attitudes are better than negative ones as negativity can bring on negative emotions that most of the time can be avoided. It is up to humans to make sure their attitudes positively reflect the behaviors they want to show. This can be done by assessing their attitudes and properly presenting them in society.

Definitely, attitude and behaviors are products of a culture. Change in attitude and behavior or belief or values require change in culture. Culture change can be difficult. It requires people to revisit again or reevaluate their beliefs, values, attitudes and only then they can change their behavior. It is often difficult for people to unlearn their old way of doing things, and to start

performing the new behaviors consistently. However, it does not mean to say that culture cannot be changed; it can be changed if members of society are willing to change their attitude and behaviors, belief and values. A closer look at instinct driven behavior might help us understand this viewpoint better. For this, we can look at animal behavior, which is mostly controlled by instinct. In the case of humans, they can choose to ignore even such basic instincts, and put more thought and analysis in their behavior. They can also choose to do things in radically different ways. In this understanding, culture can be changed if people want to.

Environmental problems are considered anthropogenic environmental problems. It is called anthropogenic environmental problems because one of the main causes of environmental problem is the attitude of human beings toward the environment. Such attitude is rooted in the culture. One of the example is the Judeo-Christian culture as reflected in the Gen. 1:27-31, that after “God created the universe, He created man, male and female and blessed them and tell them to subdue the earth and have dominion over the fish of the sea, the birds of the air and living things that move on the earth”. This teaching has been influencing the mind of people up to now and it has been taken by the capitalist as the basis of their argument against the environmentalists (Bricker, 2009). Such teaching sees the environment is seen as an object to be manipulated to serve the needs of human being. Human being is the center and everything around him is objects to serve his/her needs. Environment is recognized only in terms of their instrumental value but not their intrinsic value.

In relation to environmental problems, solving environmental problem cannot be addressed just by creating laws or rules that prohibit destroying the environment. Since problem is rooted in the culture, then solving environmental problem requires changing of culture or mindsets. Changing culture means changing people’s belief, their views, value, perceive and only then they can change their attitude toward the environment or nature. Thus it needs to introduce new views about the environment that people need to adopt to replace the old view of environment.

Psychologists have long recognized that environmental problems are caused by maladaptive human behavior as pointed out by Maloney & Ward, (1973). Supporting such idea, Oskamp (2000) accused human behavior as the culprit of the environmental problem. He argued that human behaviors or actions have caused many harmful and many possible irreversible changes to the environmental conditions that support life on earth. He then proposed that possible solution to environmental problem is to change humans’ understanding and attitude toward the environment.

### **Environmental Attitude**

Environmental attitude is “the collection of beliefs, which affect, behavioral intentions a person holds regarding environmentally related activities or issues” (Schultz, Shriver, Tabanico,

& Khazian, 2004). Some studies conducted by Hines, Hungerford, and Tomera, (1987); Kaiser, Wölfing, and Fuhler, (1999), support such idea that environmental attitude has affected human behavior toward the environment. However, dimensions of environmental attitude seem to have no common stand. According to Pierce and Lovrich, (1980), Poortinga, Steg, and Vlek,( 2002), there are two dimensions of environmental attitude which are unconcerned about the environment at the low end and concerned for the environment at the high end. In this two-dimensional tradition, EA are classified as rooted in either a concern for all living things (*ecocentric* concern) or in a concern for humans (*anthropocentric* concern). Pierce and Lovrich, 1980; Poortinga, Steg, and Vlek, (2002), the proponent of two dimensions of environmental attitude, have used Thompson and Barton's (1994) scales to measure the human attitude toward environment. While Stern and Dietz's (1994) proposed three dimensions of environmental attitude which is based on the value orientation. Based on this value orientation, there are three environmental attitude and they are categorized as rooted in a concern for the self (*egoistic* concern), for other people (*altruistic* concern) or for the biosphere (*biospheric* concern). To measure the three dimensional environmental attitude, the proponent used Schwartz's (1992) value items.

However the present study will not use method used by those persons mentioned above but it will use the Environmental Attitude Inventory (EAI) developed by Milfont and Duckitt's (2006) original factor analytic scale. The method was used by Milfont and Duckitt's (2006) in their study on the Preservation and Utilization: Understanding the Structure of Environmental Attitudes. This EAI was to complete and to balance what have not been included on two and three dimensional environmental attitude scale developed by Thompson and Barton's (1994) and Schwartz's (1992). Milfont and Duckitt had categorized environmental attitude into twelve categories and they are enjoyment of nature, support for interventionist conservation policies, environmental movement activism, conservation motivated by anthropocentric concern, confidence in science and technology, environmental threat, altering nature, personal conservation behavior, human dominance over nature, eco-centric concern, and support for population growth policies. If Milfont and Duckitt (2006) did not classify environmental attitude and environmental behavior, however, Hines, et al. (1986/1987) and Olsen (1981) pointed out that there are two types of environmental attitude used to predict ecological behavior and they are attitude toward the environment and attitude toward ecological behavior. Based on the EAI of Milfont and Duckitt (2006), the current study would classify the EAI into three categories and they are attitude toward environment, attitude toward ecological behavior and behavior toward environment. The reason why the researchers classify them because attitude and behavior are two different factors, in which attitude precedes behavior, in the sense that attitude influences the behavior of a person.

Attitude is the how you think or feel about someone or something or it can be defined as learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object (Eilam & Trop, 2012). From such definition, it is clear that attitude has an

object. A person has an attitude about something, be it a person or an object. In that case, attitude can be favorable and not favorable, can be positive or negative. In relation to our study, environment is considered as an object. As an object, the environment is constantly present and has multiple sub-objects which do not, as individual objects, represent the totality. Our attitude toward the environment will not be the same toward different sub-objects of environment. We have separate attitudes toward specific objects in the environment such as pine trees, a particular river, the Rocky Mountains, flower, animals, forest, etc. The environment is an expediential object, but no one experiences “the environment” as a whole, but rather separate distinct aspects of the environment (Heberlein, (n.d).

As I have mentioned earlier, that attitude can be favorable or not favorable, is because attitude has another components which are emotional (feeling) and cognitive components which refers to dispassionate facts and beliefs. Consequently attitude has some evaluation components. This may be very deep at an emotional level, where it is called affect. Thus, though not all, the object of attitude elicits emotional response, which may include like and dislike. This evaluative judgment such as, like or dislike, is defined as an attitude by Bern (1970) and Fishbein and Ajzen (1975). This attitude is based on evaluative beliefs and beliefs about a particular object. Attitude towards the environment commonly refers to environmental concern. Such concern may be classified as anthropocentric concern of environment and eco centric concern of the environment. Anthropocentric concern may include support for conservation policies and protection of the environment motivated by anthropocentric concern for human welfare and gratification, versus support for such policies motivated by concern for nature and the environment as having value in themselves. While eco-centric concern may include a nostalgic concern and sense of emotional loss over environmental damage and loss, versus absence of any concern or regret over environmental damage.

### **Anthropocentric attitude**

Centrism is a world view or the way how people view or look at things that place some particular value at the center. Environmental anthropocentrism is valuing nature because of material or physical benefits it can provide for humans. Nature is considered important if it can provide benefit for human beings. Human’s need is at the center and everything else should serve human needs. As the Gale Encyclopedia of Science (2008) puts it that humans is considered to be the most important thing in the universe or on the planet. Anthropocentric attitude suggests that humans have greater intrinsic value than other species. Along such argument, anything that is useful for the fulfillment of human needs should be exploited. Such world view can have a devastating effect on the environment such as unsustainable environment or the extinction of living creatures. This kind of world view is the main culprit of violence against the nonhuman world.

Kortenkamp and Moore (2001) cautioned human beings the way they treat the nature because any kind of treatment can affect human beings. Therefore both call our attention that



anthropocentric attitude deserves moral consideration because how nature is treated affects humans. Such call deserves our attention because when humans see the environment as purely in its instrumental value, then it can lead to a manipulative behavior toward environment. Both call humans to see nature in its intrinsic value, in the sense that nature has its own intrinsic value. Nature is good in itself.

### **Human Dominance over nature attitude**

Our views toward nature are in fact influenced by culture because all of us are raised within certain culture and therefore our views toward nature are different (Gibson, 2002). One component of culture is religion. The bible has formed our views toward nature such as Genesis, 1:26 which says, “Have dominion over the fish of the sea and over the birds of the air and over the cattle and over all the wild animals of the earth and over every creeping thing that creeps upon the earth” This text has been misunderstood because people have understood dominion as domination. As a result, many people have taken this text to justify human supremacy over nature and their manipulative behaviors. Such text indicates that the biblical mandate for human is to have dominion and not domination. However, the command to subdue should be understood within the context. The context was that human life was fragile in the face of threats from snakes and wild animals. Therefore, the command to “subdue” was meant to be able to restrain that which would bring them harm. This is according to the understanding of the word, “dominion”. The Hebrew word for “dominion” does not mean domination or exploitation but it means to “take responsibility for” and “to protect” earth as a domain for which humans are responsible. In the context of Israel, the job of ruler was not to subdue or to dominate but a ruler who had dominion over Israel would be expected to be like a shepherd caring for and protecting the sheep. Rules is expected to take responsibility for the people in his realm, not to tyrannize or exploit them but to see that the people were protected and that justice was done for the poor, the widows, and the orphans. As such, “to have dominion over all the creatures” means that humans are to care for God’s good creation. This text would be clearer if it is connected to Genesis, 2:15 which says “The Lord God took the human and put him in the Garden of Eden to till it and to keep or preserve it.” From this text, the job of humans is to serve, preserve the land so that plants survive and thrive, not do dominate or exploit it.

Another source of our dominant behavior over nature comes from the belief that humans are not animals. Since they believe that they are not animals, and thus they claim dominance over the animal kingdom. Socio-biologists and primatologists on the other hand think otherwise. Humankind is closely related to apes; as humans share close to 98% of our genes with those of apes (Wilson 1975). Socio-evolutionary biologists might take this revelation to infer that human beings’ relations with nature may be out of innate characters (Wright, 1994). However, even though evolutionary linkages to apes may lead to the conclusion that humans are just another ape, the majority of humans would not believe it. Instead they place humans as being above apes and apes as being just another lowly animal. The theory of evolution and any other linking of

human beings to apes or animals has readily been challenged and denied by most religions (Gibson 2002). Religion still holds the primacy of human beings over nature as indicated in the bible texts that we have mentioned. Human being was created separately, independently and was tasked to have dominion and subdue the earth. Such biblical version has been taken by some to justify the position of man over nature. Human beings have generally connected animals with the wilderness.

### **Eco-centric attitude**

The word, “eco-centrism” is originated from Greek word, “oikos” which means house, and “kentron” which means center. Eco-centrism is a term used in ecological study to denote a nature centered, not human centered as proposed by anthropocentrism. Eco-centrism denies the argument that only humans are the sole bearer of intrinsic value; possess greater intrinsic value than human nature. Eco-centrism argues that there is an equality of intrinsic value across human and non-human nature (Rowe, 1994). This argument is in line with the previous argument presented by Leopold (1949) who argued that all species, including human are a product of long evolutionary process and are inter-related in their life processes. Inter-relation between the two is a kind of recognition of the importance of non-human nature’s contribution to the life of humans. In other words other non-human nature contributes to the life of humans and without it, humans cannot survive. As Spirkin (2016) pointed out that man is constantly aware of the influence of nature in the form of air he/she breaths, the water he/she drinks, the food he/she eats and the flow of energy and information. Further he argues that we are connected with nature by blood ties and we cannot live outside nature. This argument is in connection with eco-system argument that all living things are interconnected.

The main question for eco-centrism therefore is the moral value of each part of the ecosystem. If we are thinking in eco-centric terms, we would save distinct species prior to human being which is opposed to the anthropocentric attitude. In the anthropocentric attitude, most people would instinctively save human lives prior to animals. However, the eco-centrism recognizes that all living beings have moral relevance because they are part of the eco-system, therefore the question would be: to what extent should we respect different species?( Johansson, 2012). Definitely, there is no one above the other because both, humans and non-human nature are interrelated and dependent on each other. Humans are steward of the environment and environment in return gives life to human beings.

### **Environmental Behavior**

Environmental behavior needs to be understood in the first place before we can point out its influence toward environment. The term “behavior” is mostly intuitively understood and most psychological and sociological research into behavior has not suggested definitions of the term

(Eilam & Trop, 2012). However, in the context of the present study, we understand the term as any active responsiveness to current environmental issues, believed to be pro-environmental by the person performing the response. In other words, human behavior is about human act. Human act is deliberate act with a certain motive and purpose in mind. Thus environmental behavior means how human beings response to the environmental problems.

Anthropocentric global warming is simply pointing to the fact that human actions have shaped the global climate. The root cause is not something outside of human beings themselves. Human beings are the main actors to be blamed. As Jarreau (2014) argued that it is our environmental *behaviors* in the end that either mitigate or contribute to global climate change today. According to him that our fundamental values, attitudes, beliefs and intentions are contributing factors to predicting our behaviors toward the environment. Such argument is emphasizing the fact that solving environmental problem, global climate is no other than solving human attitude and behaviors toward environment. Jarreau (2014) as he quoted from Rosa and Dietz (2012) argued that most releases of greenhouse gases are driven by consumption of goods and services by individuals, households and organizations, and the manufacturing, transport and waste disposal that underpins that consumption. Thus, in light of today's pressing environmental issues, the need to engage individuals and communities in positive environmental behaviors is more critical than ever.

### **Environmental movement activism**

Environmental movement can be classified as scientific, social, and political movement for addressing environmental problems. The environmentalist groups advocate the sustainable management of resources and stewardship of the environment through changes in public policy and individual behavior in dealing with the environment. The concern of environmental movement is not just about conservation which is focusing on the wise and efficient use of natural resources for future generation but it is also demanding on a clean, safe, and beautiful environment as part of higher standard of living (Encyclopedia.com, n.d).

Environmental movement may not bear fruits if there are no supports coming from individuals and even the government. Largely the movement depends on the financial resources which may come from individual person or government budget. Montague (2012) lamented that environmental movement is not winning and it is because of failed policies of environmental funders. The funders have favored top-down elite strategies and have neglected to support a robust grassroots infrastructure. Such strategy is contradictory to the process of change. Change is not imposed from above but large scale change should be started from the grassroots.

### **Personal conservation behavior**

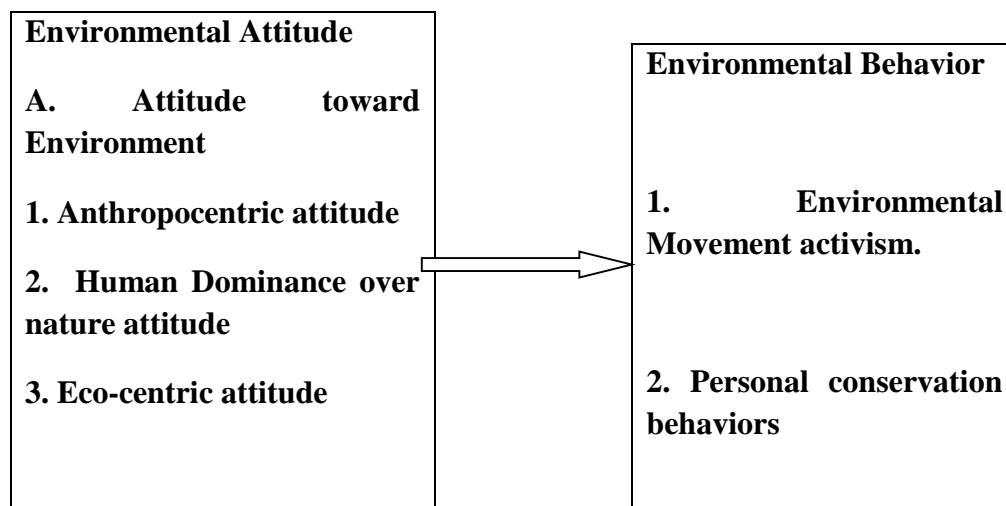
Conservation behavior is becoming important when the natural resources are becoming scarce and the climate is getting warmer. By applying such behavior, the natural environment can be sustained in the long run. Most acknowledge that our behavior plays an important role in

creating and resolving environmental challenges. This effort can only be done if people understand the importance of environment in relation to human life and the danger of climate change to the survival of natural environment and living things inside it. Education and communication play essential roles in creating a sustainable future.

It cannot be denied that human activities are often the direct cause of threats to wild species and habitats. Conserving our planet's biodiversity requires understanding which of our activities do harm to the environment and any living things in it, and developing and implementing sustainable practices and behaviors that will benefit both human populations and the nature that surrounds them (Conservation Breeding Specialist Group, n.d). Improving the awareness of people related to the effect of human behavior toward the environment can help them understand the necessity of the importance of conserving natural resources through the revision of their behavior.

### **Conceptual Framework**

The study is assessing the relationship between the environmental attitude and environmental behavior toward environment of Senior High School Students of Divine Word Colleges in Region I. The concept of the study revolves in the paradigm where independent variable is environmental attitude and under environmental attitude the study classifies anthropocentric attitude, human dominance over nature and eco-centric concern attitude. While its dependent variable is environmental behavior and environmental behavior is classified into environmental movement activism and personal conservation behavior. The study would measure environmental attitude toward environment and environmental behavior. Second, it will measure how those attitudes affect the behavior toward environment of the students. The paradigm reflects relationship between students' environmental attitude and their behavior toward environment. Environmental attitudes are important predictor because they often, but not always, determine behavior that either increases or decreases environmental quality.

**Independent Variable****Dependent Variable****Statement of the Problem**

The study aims to assess and determine the relationship between human attitude and human behavior toward the environment. It specifically seeks to answer the following questions:

1. What is the environmental attitude of Senior High School Students of Divine Word Colleges in Region I toward environment in terms of:
  - a. anthropocentric attitude,
  - b Human dominance over nature attitude
  - c. Eco-centric attitude.
2. What is the environmental behavior of Senior High School Students in terms of:
  - a. environmental movement activism?
  - b. Personal conservation behaviors.
3. Is there a relationship between environmental attitude and environmental behavior of Senior High School Students of Divine Word Colleges in Region I?

**Assumptions**

The study is guided by the following assumptions:

1. The questionnaires used in the study are valid.
2. The employees of Catholic schools in Ilocos Sur are concerned with the environment.

3. Human attitude toward environment can affect human behavior toward environment.
4. The damage of environment is caused by human attitude and human behavior.

### **Hypothesis**

The study is guided by the following hypothesis:

There is a relationship between attitude toward environment and human behavior toward environment.

### **Scope and delimitation of the Study**

The study is limited to measure the level of environmental attitude and environmental behavior of Senior High School Students of Divine Word colleges in Region I and to find out the relationship between environmental attitude and environmental behavior. The variables to be measured are anthropocentric attitude, human dominance over nature, eco-centric concern, environmental movement activism, and personal conservation behaviors.

The study is limited to Catholic private colleges that are operating within the province of Ilocos Sur, Philippines.

### **The Importance of the Study**

The outcome of the study would help the curriculum developer of the Senior High School Department of the Divine Word Colleges in Region I. The curriculum should be based on the concern of the environment and helps the student to understand the environment and know how to take care of the environment.

## **Chapter II: Related Literature and Studies**

There are enough resources related to books and studies on attitude and behavior toward environment. This is the area of environmental psychology. The study takes their concept and studies to strengthen our theory of the study. Tentatively based on the field study that we have read, apparently there is influence between attitudes and behavior toward environment. This part presents the related concepts presented by several authors and studies conducted by several researchers.

### **Related Literature**

#### **On Human Attitude toward Environment**

Based on the library research, it seems hard to find many books discuss human attitude and human behavior toward environment. The topics are usually discussed under environmental psychology. Mostly the literatures that we discuss here are influenced by the environmental psychology. The first book that the author encountered was the book authored by Gifford and Sussman (2012). The title of the book is “Environmental Attitude”. In that book Gifford and Sussman (2012) argued that environmental attitudes are important because they often, but not always, determine behavior that either increases or decreases environmental quality. The two authors acknowledge to a certain extent that human attitude has some effects on the environment quality. Indirectly, these authors recognized that environmental attitude can be positive and negative. Positive environmental attitude are attitudes favorable to the preservation of environment and such attitude can improve the quality of environment, while negative attitudes are attitudes which are not favorable to the environment and such attitude can be harmful to the environment. In their presentation, Gifford and Sussman discussed attitude and environmental attitude independently. According to them, attitude has three elements and they are cognitive, affective and conative elements and while environmental attitude has preservation and utilization dimensions. In our view we can say that environmental attitudes involves cognitive, affective and conative elements too in which such attitude will influence the behavior, either to preserve or to utilize the environment.

“Respect for nature” is a categorical imperative or the order of the day for every human being to follow. Our respect for human being is relied on the fact that human being is endowed with dignity. Thus the dignity accorded to human beings obligates us to respect them unconditionally. Unconditional respect means that the respect accorded to the person is not because of his/her status, position, achievement and wealth as we usually do but it is because simply he/she is human being. Because of such dignity, we should not use human beings as means to an ends but human beings as endowed with reason are ends in themselves. The same line of thought is applied to the environment (Becker, 2009). Our respect for nature is just like our respect for human being. In the development of ethic of respect, the ethic of respect was not anchored only on human beings but it applies to all living things. Taylor (1986) was inspired by the Kantian theory of categorical imperative develop the same theory applied to all living organism. According to Taylor (1986) all living things or organism are ends in themselves and they are not different from each other and therefore they must be accorded by the same moral respect. Further Taylor emphasized that our respect to living organism is also relied on the concept that all living organism has not only intrinsic value which is dependent upon the appraiser but also intrinsic worth which is grounded in the objective properties of moral subjects, the most important of which is that they are teleological centers of life (Taylor, 1986).

Batchelor and Brown (1992) in their book, *Buddhism and Ecology*, presented the view of Buddhism about the environment. According to them, in the Buddhism, the practice of non-violence makes all harming and killing an offense and thus it appears to leave an indelible mark on the treatment to animals and nature in general. According to the dictate of the precepts,

harming the animals and vegetation is not acceptable and maybe considered as immoral. The Buddhism affirms life and do not kill. The practice of non-violence and compassion are expressed in the resistance of Buddha to the sacrifice of animals. There is no way of recovering of the life of those animals back to earth again. Though the investigation of Bachelor and Brown has not been connected to how the Buddhism followers behave toward environment but we believe that ideas and perceptions matters. The investigation of Bachelor and Brown into religion on environmental attitude helping us to convincingly say that culture, religion has strong influence on the formation of human attitude, human mind and human behavior toward environment.

The concepts above just prove the existence of interdependence between attitude and behavior. Nalukenge (2009) in his paper, *Environmental Ethics is Key to Sustainability in a Contemporary Society* argue that the way how humans interact with the environment depends on the ethics of a particular individual or society. The outcome of such interaction affects both quantity and quality of environment resources. He continued to argue that the sources of respect to the environment are based on instrumental and intrinsic value of the environment. Its instrumental and intrinsic value generates moral duty on the part of moral agent to protect it. Though such idea can be argued, however, such view enforces our belief that our attitude toward environment is really influenced by our values, beliefs or culture of the society. Cultures that enhance moral behavior toward environment will definitely bring positive effect on the preservation of the environment. Thus, Nalukenge (2009) further explained that culture, religion and indigenous ethics can be adopted to inspire new thinking that will ensure respect and compassion for other living things. However not all traditions are environmentally friendly.

In relation to the influence of attitude toward the treatment of environment, White (2008) in his book, *"The Historical Roots of Our Ecological Crisis"* argued that the source of ecological crisis is primarily is due to the Judeo-Christian tradition rooted in the anthropocentric attitude toward the environment. Its anthropocentric attitude is rooted in the book of Genesis 1: 26-28 which states:

then God said: Let us make man in our image, after our likeness. Let them have dominion over the fish of the sea, the birds of the air, and the cattle, and over all the wild animals and all the creatures that crawl on the ground. God created man in his image, in the divine image he created him, male and female he created them. God bless them saying, "be fertile and multiply; fill the earth and subdue it. Have dominion over the fish of the sea, the birds of the air and all living things that move on the earth.

When this text is taken separately, people will understand immediately that human beings have received the marching order from God to use the earth as they wish which is included in order to subdue it. Thus, Bricker (2009) advises the reader of this biblical text, not to take it independently without referring it to the other text in the Genesis, 2:15 which states: "The Lord God then took the man and settled him in the Garden of Eden, to cultivate and care for it".



From Genesis 2:15, “God put human beings in charge of the earth to have dominion over the animals and to cultivate and care for the land”. The text is not an absolute marching order to subdue the earth as human beings wish. There is a responsibility to cultivate and care for it. Problem arose from the beginning when people ignore Genesis 2:15 and take the texts that benefit human beings’ immediate interest.

The above argument really points out how culture has influenced the formation of human mind. Human beings’ belief or religion definitely has strong influences over human behavior, the way they deal with others and environment. White (2008) claimed that what people do about their environment depends on what they think about themselves in relation to things around them. The condition of environment is dependent on how people perceive the environment and such perception really depends on their culture, their religion.

Strengthening the position of White (2008), that culture or belief has influenced the human behavior toward environment; Roach (2003) also argue that human beings have unconscious phantasy about the nature. She argued that nature has been associated with mother, however, mother will not always be a good mother, and there will also bad mother. She pointed out that unconscious phantasy about the mother shape our understanding about the reality. The world is like a screen onto which we project unconscious phantasies. We have seen that potent phantasies about the mother, both idealized and demonic, projected on the environment. She explained that to a certain degree, there is a legitimate metaphorical tie between nature and mother. These ties are reinforced—or one may even say exploited— by paranoid-schizoid phantasy that helps create the figures of Good and Bad Mother Nature. The intense and polarized passions of this position contribute to the emotional intensity and popular resonance of the Mother Nature imagery. Though the concept of Roach has not been validated through experiential study in the field as to the extent of the relationship between human beings’ phantasies about their mothers and how they affect their behavior toward environment, however, her position support our views in this study that belief, views, perception really affect our behavior. Since nature is associated with mothers, our phantasy on idealized and demonic mothers will be projected into how we see and behave toward the environment.

On the economic side of human attitude, Hadfield (2009) argued that the idea of economic growth and sustainability and the ideology of progress through technology have brought prosperity for some over a few generations at the expense of long term degradation on a planetary scale. It cannot be denied that technology has brought prosperity to different parts of the world but at the same time, ideology of economic growth has been linked to a set of interlinked, impending, and long predicted, crises of the physical world such as resource depletion, water shortage, soil deterioration, the accumulation of non-degradable waste and climate change. The idea of development and sustainability has been proven to be unsustainable in the long run. The point of this argument is that the idea of economic growth without considering its effect toward the environment is the source of environmental problem or global warming that we are facing. Running after the projected economic growth often time blind the

eyes to see the long term consequence. The concern of sustainable development which is good idea but unfortunately when it is operated under blind vision for the future can be a source of tragedy in the long run. It is under the threat of the current global situation of environmental degradation, climate change, economic instability and social disorder, Weber (2009) calls for new thinking and action. He suggested reviving cultural practices, which incorporate respect and co-existence with nature is one way of restoring the environment. It is a long such call, Schinkel (2009) calls for compulsory education on the environment and he recommended, which I may not agree with, a moderately anthropocentric view interpretation of ecological behaviors should be offered, supplemented by the notion of justice for nonhuman animals.

### **On Human Behavior toward Environment**

According to Psychology Glossary (n.d), human behavior refers to the full range of physical and emotional behaviors that humans engage in; biologically, socially, intellectually, etc. and are influenced by culture, attitudes, emotions, values, ethics, authority, rapport, persuasion, coercion and/or genetics. This type of behavior is scientifically viewed as being without specific meaning, unlike social behavior that is influenced by the expectations of others. (<http://www.alleydog.com/glossary/definition.php?term=Human%20Behavior#ixzz4Fb8ure7L>). In such definition, it may be correct to say that one can be defined and identified through their behavior because behaviors, after all, are not just the product of accident but it is somehow planned behaviors. Behaviors are reflections of what is inside the person: his/her values, attitudes, emotions, and moral values.

According to the theory of Planned Behavior (Ijzen, 1991), behaviors are caused or influenced by the intention. The theory argues that the most proximal predictors of behavior are behavioral intentions and intentions are influenced by several factors such as (a) the extent to which individual holds a favorable attitude toward the behavior. Favorable attitude determines the intensity of the behavior. Favorable attitude includes individual's values and beliefs about the outcome of the behavior. In this case, values of the outcome influence the behavior. (b). Subjective norms. This refers to a belief of what other people think the person should do or general social pressure. In other words, a person behaves in line with social expectations. (c.) The extent to which the individual perceives the behavior at hand to be under his or her personal control (perceived behavioral control). This is related to self-efficacy in which the person believes in himself/herself to perform the behavior. The latter relates to an individual's belief that their behavior will successfully promote expected goals (Sawitri, Hadyanto & Hadi, 2014). The Planned Behavior Theory prove the point that we are going to pursue in this study that human behaviors are influenced by their intentions and their intentions are influenced by their attitude, the way how people see or perceive the objects or human beings. In line with the theory of Planned Behavior, the Values-Beliefs-Norms Theory also argues that prosocial behavior is stimulated by activating norms of helping. These norms stem from three factors: (a) personal values, (b) beliefs that these values are under threat, and (c) beliefs that the individual can take action to reduce the threat and restore those values (Sawitri, Hadyanto & Hadi, 2014).

Other social psychologists, Glanz and Rimer (1995) argue that individual behavior is not just influenced by personal attitude and values but also other factors. They pointed out that individual, interpersonal, institutional, community and public policy factors influence individual behaviors. In terms of individual factor, knowledge, attitudes, belief and personality determines individual behavior. These factors are unique to each person. According to Glanz and Rimer, the psychologist would focus on these items (knowledge, attitude, belief, personality style and disposition) to explain individual motivation. On the interpersonal factors, there are several determinants of individual behaviors and they are social identity, support and roles. Social identity refers to how people see themselves with respect to other people. Social background can also determine the behavior of individual person. Further, individual behavior can also be affected by the level of social support one has from people around them and the role of one has in the organization. The next level of determinant factor in individual behaviors is institutional factors where people work and this includes rules, regulations and informal structures. People behave according to what is allowed and not allowed by the rules of the organization. Besides institutional factors, another factor influences human behavior is the community. Community factors involve all of those influences, issues, and structures, which are a part of the general neighborhood, the general social environment in which people live. The last factor that stimulates human behavior is public policy. This refers to public regulation that promotes certain behavior. Usually people follow the rules to avoid penalty.

If Glanz and Rimer (1995) argued that internal and social factors influence individual factors, however, Banduras (1986), a social cognitive theorist in his book, "Social Cognitive Theory", argue that individual behaviors are not only driven by internal factors or forces but also by external factors. Internal factors may include what Glanz and Rimer (1995) called individual factors or in Bandura's term, personal factors which include knowledge of the person, drive, trait, attitude, personality and beliefs. While external factors refer to the environmental factors which represent situational influences and environment in which behavior is performed.

Related to individual factors or personal factors as mentioned by Glanz and Rimer, Bandura and Hoffman (2015) argued that there are five most powerful self-beliefs that ignite human behaviors and they are control belief, competency belief, value belief, goal orientation beliefs and epistemology belief. Control belief refers to our self-belief that we have control over our own destiny, not depending on others' help to reach our goal. Next is competency belief. It is our overall assessment of our capability to achieve the desired outcomes and that we have the skills and abilities to complete the task. While value beliefs refers to our assessment of the outcome the behavior if the outcome of such behavior will meet his standards, if it is important for him and cultural standards, if it is not violating the cultural standards. It is here people is reluctant to pursue certain behavior if he/he finds out that such behavior will not be so important for him and if the culture does not allow such behavior to happen. Another self- belief is goal-orientation belief. Goal orientation beliefs are related to the reasons why we pursue such behavior. *Goal orientation* represents the alleged purpose for engaging in learning or the reasons

a particular performance target is chosen. Lastly is epistemology belief. This belief refers to the belief of the sources of knowledge. The epistemology belief argues that there are several ways of obtaining knowledge and information. Some people may believe that knowledge is fixed, there is only one way how things can be done, while others believe that there are many other ways of doing things, there are many alternatives. According to Hoffman (2015) these are the instrumental forces that drive and direct our behaviors. These are the tacit beliefs that we have about ourselves. These self-beliefs determine the direction and intensity of our motivated action. The beliefs determine what we do, how we do it, and how we see our accomplishments in relation to the rest of the world.

### **Related studies**

There have been many studies conducted along environmental attitudes and behaviors toward environment of Secondary and High School students in other parts of the world but in the Philippines such study may have not been conducted or published. The researcher has tried to research on environmental attitude of Senior High School Students in the Philippine but it was not found in the internet. The studies that are presented in this paper are taken from different countries.

Chan, (1996) conducted a study on Environmental attitudes and behavior of secondary school students in Hong Kong. The study was to measure their environmental attitude and how such attitude affect their readiness to engage in various pro-environmental behaviors including paper recycling at school and at home and the use of less tissues and plastic bags. The study found that students' expressed great concern about the environment and exhibited a strong willingness to participate in pro-environmental behavior. To measure the effect of environmental attitude toward environmental behavior, the study used the Pearson correlation coefficient and it was found that there is a correlation between environmental concern and comprehensive behavioral intention. Such study indicates that when the concern toward the environment is high and it encourages the students to engage to go into activities that save the environment. Related to the source of knowledge or information, the study found that television and school were cited as major sources of environmental information. It was also pointed out on the result of the study that Mass media were important tools in the dissemination of environmental information.

Heyl, Díaz, and Cifuentes (2013) carried out a similar study but a higher level on Environmental attitudes and behaviors of college students. The aim of this study was to identify whether there are significant differences between college students depending on their diploma of specialization, related to the environment or not, the year in which they are studying and gender. The sample consisted of 383 engineering students in first, third and sixth year, with two instruments designed to measure environmental attitudes and behaviors. The study found that there was significant difference between students pursuing diplomas related to the environment and those who are not. Otherwise, no significant differences were observed between students enrolled in different

levels. The study also found that there was correlation between perceived effort, positive environmental attitude and the frequency of pro-environmental behaviors in students.

Environmental attitude can be a product of environmental knowledge. Along this concern, Bradley, Waliczek and Zajicek (2010) conducted a study on Relationship “Between Environmental Knowledge and Environmental Attitude of High School Students”. Results indicated significant differences in both knowledge gain and attitudes of students after exposure. Students' environmental knowledge scores were increased by 22% after they completed the environmental science course. As the effect, students' environmental attitudes became more environmentally favorable. The study found a significant correlation between pretest knowledge scores and pretest attitude scores and between posttest knowledge scores and posttest attitude scores. In both cases, students having higher knowledge scores had more favorable environmental attitudes compared with students with lower knowledge scores. Related to the same interest of measuring environmental attitudes and behavior of secondary school, Jackson, Brown, Cain, Dingle and Bonebrake (2016) initiated a study on “Environmental Attitudes and Behaviors among Secondary Students in Hong Kong” The study found that No significant differences were found in attitudes or behaviors based on school type. However the study found a significant effect of gender and age on students' attitudes toward environment.

Supporting the similar findings, Sadik and Sadik (2014) conducted a study to determine the source of environmental knowledge and the relationship between knowledge and attitude. The main purpose of such study was to investigate knowledge and attitudes of teacher candidates in Social Sciences Education and Science and Technology Education department in Turkey towards environment. There were 323 teacher candidates as 171 female and 152 male participated in the study. 43% of participants find the Internet and television more effective in environmental awareness. The study found that teacher candidates have a moderate level environmental knowledge, however, they have more positive attitude in terms of environment but low level environmental behavior.

In the global level, a Meta -analysis of global youth environmental knowledge, attitude and behavior was conducted by Mifsud (2012). The study found that a majority of global youth reported to have a positive attitude towards the environment and a variety of levels of environmental knowledge. Specifically the study found that females have more positive attitudes toward the environment than males. The main sources of information that they get for environmental awareness were television, books, newspapers, schools and friends. The students pointed out the main environmental problems such as pollution, water pollution, the loss of biological diversity and “population increase in the big cities” and hazardous waste.

One of the results of Meta-analysis pointed out the difference between males and females' attitude toward environment and such finding was confirmed by the study of Brien and Pease (2007). They conducted a study to determine environmental literacy in terms of knowledge and attitudes of IOWA State University Students. The results suggested correlations between

environmental knowledge and attitudes and students' demographic characteristics such as age, gender, college, student status, childhood environment, and outdoor activities practiced as a child. Finding on the relationship between childhood environment and environmental knowledge and attitude was also supported by the study of Olufemi, Mji and Mukhola (2014). They conducted an assessment of secondary school students' awareness, knowledge and attitude toward environmental pollution issues in the mining regions of South Africa. The purpose of the study was to measure their AKA between students living under different environmental conditions which is from coal mining province and non-coal mining province. The study found that there was significant difference between students from the two provinces with regards to all the environmental variables tested, where students from coal mining province had higher mean.

Similar study among secondary students in Bangladesh was conducted by Sarker (2011) to determine the difference of knowledge and attitude toward environment between students who are coming from urban and rural areas. The study involved 400 secondary students, with equal number of boys and girls from both the urban and rural schools participated in this study. The study found that overall students from both the urban and rural areas expressed favorable environmental attitudes with girls having a significantly higher level of favorable environmental attitudes than boys; in particular, rural girls had the highest level of environmental attitudes comparing among others.

While most of the findings concluded that there is a significant relationship between environmental knowledge, attitude and environmental behavior, however, the study of Aminrad, Zakarya and Sakari (2013) may not point the same conclusion. Both conducted study on the relationship between awareness, knowledge, and Attitudes toward Environmental Education among Secondary School Students in Malaysia. The results of Person Correlation showed a significant but weak relationship between awareness and knowledge on environmental issues while there was high relationship observed between awareness and attitudes among respondents. The statistical test showed a negligible relationship between knowledge and attitude among students about environment. The study concluded that a high level of awareness and knowledge plus positive attitude of students may come have been achieved from the families of respondents, teachers, media, private reading and school curriculums regarding the environment that increases the environmental view among students as well as overall in the society.

### **Chapter III: Research Methodology**

The nature of this study is a quantitative study. The nature of quantitative study is to use statistics to analyze and interpret the data. Therefore, this chapter presents the research design used in this study, data gathering instruments, population, locale of the study, data gathering procedures and statistical treatment of data.

#### **Research Design**

Since the study is a quantitative research, thus, the study used descriptive method of research to assess the level of Senior High School's attitude toward environment and Senior High School's behavior toward environment. It describes what is. It involves the description, recording, analysis and interpretation based on the data gathered through statistics. This is a fact finding with adequate interpretation. It assesses, determines and reports the way things are. In other words, it describes the data that have been collected on research sample, describes "what is" about the data gathered.

In line with the current study, descriptive assessment and descriptive correlational method were deployed. The study assessed first the environmental and behavioral attitude of the Senior High School students toward environment and then how each attitude correlated to their behavior. This was to identify what the dominant environmental attitudes among students were and what particular attitude does affect the behavior of students toward environment.

### **Locale of the Study**

The locale of the study was Divine Word Colleges in Region I, Philippines, which include Divine Word College of Vigan, Divine Word College of Bangued and Divine Word College of Laoag. All those schools are run by the Divine Word Missionaries Congregation. These colleges are within Region I, Philippines.

### **Population**

The population of the study was taken from the Senior High School Students of these three Colleges run by the religious congregations or organizations. 400 students were chosen to answer the questionnaires. Purposive sampling was used to meet the required data for the study.

## Data Gathering instruments

The study utilized questionnaires. The questionnaires were distributed to Senior High School students of the three private Catholic colleges in Region I. The questionnaires were adopted from Environmental Attitude Inventory (EAI, Milfont & Duckitt, 2005). From the EAI, the researcher selected the inventories related to the current study.

The questionnaires were consisted of three parts. First part was measuring the attitude toward the environment which was composed of anthropocentric attitude, human dominance over nature and eco-centric attitude. Second part was measuring the attitude toward ecological behavior which was also composed of attitude toward human utilization of nature, attitude toward conservation policies and attitude toward population growth policies. Third part was measuring the environmental behavior. This part is composed of two indicators which are environmental movement activism and personal conservation behaviors.

## Data Gathering Procedures

In the process of data gathering, the researcher sent letters to the Presidents of the three colleges in Region I, requesting the Presidents to allow the researcher to flow his questionnaires in his college. The researcher personally met the Presidents and employees and requested them to answer the questionnaires.

The retrieval of questionnaires was arranged between the President's representative and the researcher with the help of employees and faculty of the three colleges.

## Statistical Treatment of Data

In consistent with the study as descriptive research, therefore descriptive statistics is used to measure the weighted mean and their correlations. Since the study was not only assessing the level of environmental attitude and behavior but also how the two variables were correlated, thus the study is using Pearson's  $r$  or Product Moment Correlation Coefficient. This is to determine the strength of correlation between two interval and ratio data.

Frequency distribution and percentage was used to describe the profile of the Senior High School students of the three colleges, while weighted mean was used to determine the level the environmental attitude and environmental behavior. The following ranges of values with their descriptive interpretation will be used:

<b>Statistical Range</b>	<b>Descriptive interpretation</b>	<b>Overall Descriptive Rating</b>
4.21-5.00	<i>Strongly Agree (SA)</i>	<i>Very High</i>
3.41-4.20	<i>Agree (A)</i>	<i>High</i>
2.61-3.40	<i>Somewhat agree</i>	<i>Moderate</i>
1.81-2.60	<i>Disagree (D)</i>	<i>Low</i>



1.00-1.80                      *Strongly Disagree (SD)*      *Very Low*

### Findings

The findings of the study are presented bellow based on the statements of the problems of the study.

**1. What is the attitude of Senior High School Students of Divine Word Colleges in Region I toward environment in terms of:**

**a. anthropocentric attitude.**

No	Anthropocentric Attitude	$\bar{X}$	Descriptive Rating
1	Nature is most important because of its contribution to the welfare of human	4.25	SA
2	One of the most important reasons to keep lakes and rivers clean is so that people have a place to swim	3.82	A
3	We should protect the environment for the well-being of humans	3.79	A
4	We need to keep rivers and lakes clean in order to protect the environment and the living creatures in it and consequently contributing to human welfare	4.11	A
5	We should protect the environment because people's live are dependent on it.	3.65	A
6	Healthy planet is very important for human happiness and human reproduction	4.15	A
7	We should not cut trees because there will not be enough lumber for future generation	4.15	A
	Total	3.99	A

*Legend:*

4.21-5.00	<i>Strongly Agree (SA)</i>	<i>Very High</i>
3.41-4.20	<i>Agree (A)</i>	<i>High</i>
2.61-3.40	<i>Somewhat agree (SWA)</i>	<i>Moderate</i>
1.81-2.60	<i>Disagree (D)</i>	<i>Low</i>
1.00-1.80	<i>Strongly Disagree (SD)</i>	<i>Very Low</i>

As it is seen on the presentable table, it reveals that the total mean of anthropocentric attitude is 3.99 which is interpreted that the student agree with all the statements or questions presented under the anthropocentric attitude. This indicates that the students' view toward environment is very much anthropocentric. Anthropocentric attitude means that the environment is serving as instrument toward the welfare of human beings. Taking it singly, it shows that this statement supports the anthropocentric attitude, in which the students strongly agree that "nature is most important because of its contribution to the welfare of human" with the average mean of 4.25.

**1. What is the attitude of Senior High School Students of Divine Word Colleges in Region I toward environment in terms of:**

**b. Human dominance over nature**

No	Human Dominance Over Nature	$\bar{X}$	Descriptive Rating
1	Humans were meant to rule over the rest of nature	3.59	A
2	Human beings were created or evolved to dominate the rest of nature	3.47	A
3	Plants and animals have no much right as human to exist	2.36	D
4	Plants and animals exist primarily to be used by humans	2.96	SWA
5	Nature exists primarily for human use	3.33	SWA
6	Nature in all its forms and manifestation should be controlled by humans	2.70	SWA
7	Humans are more important than other living creatures	3.12	SWA
Total		<b>3.07</b>	SWA

Legend:

4.21-5.00	Strongly Agree (SA)	Very High
3.41-4.20	Agree (A)	High
2.61-3.40	Somewhat agree (SWA)	Moderate
1.81-2.60	Disagree (D)	Low
1.00-1.80	Strongly Disagree (SD)	Very Low

As it is gleaned from the computation of mean rating, the total mean rating along this variable is 3.07 which is interpreted that the students are somewhat agreeing toward human dominance over nature, though they are not really agreeing in all statements under the variable. Students clearly disagree with the idea that “plants and animals have no much right as human to exist” (2.36). With such rating, it shows that students somehow recognized the rights of animal and plants but as a whole they tend to agree nature is for human use.

**1. What is the attitude of Senior High School Students of Divine Word Colleges in Region I toward environment in terms of:**

**c. Eco-centric attitude**

No	Eco-Centric Attitude	$\bar{X}$	Descriptive Rating
1	The idea is that nature is valuable for its own sake is wrong and naive	3.11	SWA
2	It makes me sad to see the natural environment is destroyed.	4.33	SA
3	Nature is valuable for its own sake	3.83	A
4	I believe protecting the environment is an	4.14	A

	important issue		
5	Despite of our special abilities humans are still subject to the laws of nature	2.92	SWA
6	It makes me sad to see the forest cleared for agriculture	4.08	A
7	I believe that nature exists for its own purpose	3.92	A
<i>Total</i>		<b>3.76</b>	<b>A</b>

*Legend:*

4.21-5.00	<i>Strongly Agree (SA)</i>	<i>Very High</i>
3.41-4.20	<i>Agree (A)</i>	<i>High</i>
2.61-3.40	<i>somewhat agree (SWA)</i>	<i>Moderate</i>
1.81-2.60	<i>Disagree (D)</i>	<i>Low</i>
1.00-1.80	<i>Strongly Disagree (SD)</i>	<i>Very Low</i>

Based on the table presentation, it manifests that as a total, the average mean of the evaluation of eco-centric attitude is 3.76 which is interpreted as an indication that the students agree with all the statements under eco-centric attitude. This observation is supported by the statements that nature is valuable for its own sake (3.83), and nature exists for its own purpose (3.92). It is along such views; students are opposing the cutting of trees, and the damage of environment because of human behaviors.

## **2. What is the environmental behavior of Senior High School Students in terms of:**

### **a. environmental movement activism?**

<b>No</b>	<b>Environmental Movement Activism</b>	<b><math>\bar{X}</math></b>	<b>Descriptive Rating</b>
1	I would like to join and actively participate in an environmental group	3.98	A
2	I would like to raise funds for environmental protection	4.06	A
3	I want to get involved in an environmental organization	3.22	SWA
4	I want to persuade others that environmental protection is important	3.12	SWA
5	I would go out of my way to help recycling campaigns	3.66	A
6	I would to encourage others to plan more trees in their backyards	3.04	SWA
7	I encourage others to use public transportation, instead of their private cars	3.02	SWA
<i>Total</i>		<b>3.44</b>	<b>A</b>

*Legend:*

4.21-5.00	<i>Strongly Agree (SA)</i>	<i>Very High</i>
-----------	----------------------------	------------------

3.41-4.20	Agree (A)	High
2.61-3.40	Somewhat agree (SWA)	Moderate
1.81-2.60	Disagree (D)	Low
1.00-1.80	Strongly Disagree (SD)	Very Low

As it is gleaned from the table, it presents that as a total, the behavior of students under environmental movement activism is 3.44 which is interpreted as an indication that the students agree with all statements presented. This evaluation reveals that the students agree toward the proposed ideas related to helping the environment by actively participating in any environmental movement or groups to solve environmental problems. Students seem to feel and understand the urgency of active participation in solving environmental problem.

## 2. What is the environmental behavior of Senior High School Students in terms of:

### b. Personal conservation behaviors.

No	Personal Conservation Behaviors	$\bar{X}$	Descriptive Rating
1	I could not be bothered to save water and other natural resources	2.90	SWA
2	I will make sure that I switch off the air condition during rainy season	3.61	A
3	Whenever possible, I take a short shower in order to conserve water	2.87	SWA
4	I always switch the light off when I don't need it anymore	3.79	A
5	I do not drive my car when public transportation is available	4.03	A
6	In my daily life, I try to find ways to conserve water and power	3.30	SWA
7	Whenever possible, I try to save natural resources	4.14	A
Total		3.48	A

### Legend:

4.21-5.00	Strongly Agree (SA)	Very High
3.41-4.20	Agree (A)	High
2.61-3.40	Somewhat agree (SWA)	Moderate
1.81-2.60	Disagree (D)	Low
1.00-1.80	Strongly Disagree (SD)	Very Low

At it is derived from the table, it is revealed that as a total, personal conservation behavior of students is rated with the average mean of 3.48 which is interpreted as an indication that the

students agree to the personal conservation proposals. Individually students want to save natural resources (4.14), not to drive private car if public transportation (4.03), conserve water and power (3.30), switch off the light when it is not needed (3.79), and switch off air condition if it is rainy season (3.61). This evaluation indicates that the students support any efforts to solve environmental problems, not only by joining environmental movement but in their private capacity.

### ***3. Is there a relationship between environmental attitude and environmental behavior of Senior High School Students of Divine Word Colleges in Region I?***

#### ***Correlation between environmental attitude and environmental Behavior***

	Environmental Movement Activism	Personal Conservation Behavior	As a Whole
Anthropocentric Attitude	-0.0965	-0.0262	-0.0613
Human Dominance Over Nature	0.1127	0.0685	0.0906
Eco – centric Concern	0.4677*	0.4139*	0.4498*

\*Significant at 0.05 Level

From the correlation table, it shows that anthropocentric attitude and human dominance over nature have no correlation with environmental movement activism and personal conservation behavior. It just indicates that those two attitudes do not have influences over the behavior of the students along environmental movement activism and personal conservation behavior. However, it was found that eco-centric concern attitude correlates with environmental movement activism and personal conservation behavior. This implies that in order to improve or motivate students to join environmental movement and personal conservation behavior, eco-centric concern attitude has to be enhanced.

#### **Conclusion**

The study concludes that environmental attitude of students are still influenced by the anthropocentric view of environment. Anthropocentric attitudes views the environment mere as instrument to the fulfillment of human needs. Having such kind of attitude, however, does not follow that they reject eco-centric concern attitude because the students really agree with the eco-centric view of environment. Eco-centric argues that the environment has its own good and purpose. Meanwhile, students do not really fully support the view of human dominance over nature, students have varied opinions along their dominance over nature, though as a whole they somewhat agree.

Thus, the hypothesis of the study that there is a relationship between environmental attitude and environmental behavior is accepted along eco-centric concern. Eco-centric concern attitude

affects the environmental movement activism and personal conservation behavior, however, anthropocentric and human dominance over nature do not correlate to the environmental behavior.

### Recommendations

The recommendation of this study is drawn from the purpose of the study. The study was to determine the environmental attitude and environmental behavior and how it affects the behavior toward the environment. Since the environmental attitude of students along anthropocentric is still considered high and there is a relationship between eco-centric attitude and environmental behavior, thus the following recommendations are proposed:

1. There is a need to introduce new environmental ethics provided in the curriculum. The new interpretation of the environment or nature is needed in order to eliminate anthropocentric attitude toward environment and improve eco-centric view. The environmental views of the students are still influenced by the teaching of the bible, Genesis 1: 26-28 which states:

then God said: Let us make man in our image, after our likeness. Let them have dominion over the fish of the sea, the birds of the air, and the cattle, and over all the wild animals and all the creatures that crawl on the ground. God created man in his image, in the divine image he created him, male and female he created them. God bless them saying, "be fertile and multiply; fill the earth and subdue it. Have dominion over the fish of the sea, the birds of the air and all living things that move on the earth.

2. Since there is a relationship between eco-centric attitudes toward environmental behavior of the students, then it is necessary to enhance the students' eco-centric view. It is urgent that new interpretation of the Gen. 1:26-28 should be forwarded.

### References

Aminrad, Z., Zakariya, Z.B.S, Hadi, H.S. & Sakari, M (2013). Relationship Between Awareness, Knowledge and Attitudes Towards Environmental Education Among Secondary School Students in Malaysia, published in World Applied Sciences Journal 22 (9): 1326-1333, 2013. Retried from <https://pdfs.semanticscholar.org/adda/b62e12c205b7a65eee4611577cc4bbfea7dc.pdf>. DOI: 10.5829/idosi.wasj.2013.22.09.275

Amstrong, W. R. (1996). The Relationship between Culture and Perception of Ethical Problems in International Marketing, Journal of Business Ethics , Volume: 15, Issue: 11, Pages: 1199-1208

Annenberg L. (n.d). Population Growth and Environment. Retrieved from <https://www.learner.org/courses/envsci/unit/text.php?unit=5&secNum=5>

Bandura A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs NJ: Prentice-Hall

Batchelor, M. and Brown, K. ed., (1992). *Buddhism and Ecology*. London,UK: Cassell Publishers Limited,

Becker, G. K. (2009). *Environmental Ethics: Intercultural Perspectives*. New York: Value Inquiries Book Series (vibs)

Bem, D.J. (1970). *Beliefs, attitudes and human affairs*. Belmont, California: Brooks/Cole

Bostwana Environmental Information System. (n.d). Policies: National Policies on Natural Resources Conservaton and Development. Retrieved from <http://www1.eis.gov.bw/EIS/Policies/Lists/Legislation/DispForm.aspx?ID=8>

Bradley, C.J, Waliczek, M.T & Jazicek, M.J. (2010). Relationship Between Environmental Knowledge and Environmental Attitude of High School Students. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/00958969909601873>

Bricker, K. W. (2009). *Ten Commandments for the Environment*. Manila: Paulines Publishing House

Business and Social Sciences, August (2011), Vol. 1, Special Issue, ISSN: 2222-699, Monash University, Melbourne, Australia. Retrieved from <http://www.hrmars.com/admin/pics/95.pdf>

Chan, K.K.W. (1996). Environmental Attitude and Behaviors of Secondary School Students in Hong Kong. Retrieved from <http://link.springer.com/article/10.1007/BF02239656>

Christensen, R and Knezek, G. (2015). The Climate Change Attitude Survey: Measuring Middle School Student Beleifs and Intentions to Enact Positive Environmental Change. Published in *International Journal of Environmental & Science Education*, 2015, 10(5), 773-788

Clarke, Bruce. (2015). Environmental Attitudes and Knowledge of Year 11 Students in a Queensland High School.Published in *Australian Journal of Environmental Education*, vol.12, January 1996, pp. 19-26 . Retrieved from <https://www.cambridge.org/core/journals/australian-journal-of-environmental-education/article/environmental-attitudes-and-knowledge-of-year-11-students-in-a-queensland-high-school/0C607944B3059A84015449660FDF843C>. DOI: 10.1017/S0814062600001580

Conservation Breeding Specialist Group. (n.d). Measuring the Impact of Human Behavior on Conservation Efforts. Retrieved from <http://www.cbsg.org/blog/201310/measuring-impact-human-behavior-conservation-efforts>

Daily Inquirer. (2017). Trump Exec Says CO2 Not Global Warming Cause, Vol. 32, No. 93, p A 8.

Donald, M. (2002). *A Mind So Rare: The Evolution of Human Consciousness*. New York: W.W. Norton & Company, Inc.

Eilam, E. & Trop, T. (2012). *Environmental Attitudes and Environmental Behavior—Which is the Horse and Which is the Cart?* School of Education, Institute of Sustainability and Innovation (ISI), Victoria University. Retrieved from <http://www.mdpi.com/journal/sustainability>.

Encyclopedia.com. (n.d). Environmental Movement. Retrieved from <http://www.encyclopedia.com/earth-and-environment/ecology-and-environmentalism/environmental-studies/environmental-movement>

Environmental Education Research, Vol. 22, (2016). Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/13504622.2014.984162?src=recsys&journalCode=ceer20>. DOI: 10.1080/13504622.2014.984162

EPA. (2016). *Climate Impact on Human Health*. Retrieved from <https://www.epa.gov/climate-impacts/climate-impacts-human-health>

Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, Mass.: Addison Publishing Company.

Gale Encyclopedia of Science. (2008). Anthropocentrism. retrieved from <http://www.encyclopedia.com/history/modern-europe/czech-and-slovak-history/anthropocentrism>

Gibson, K. R. (2002). "Customs and cultures in animals and humans: Neurobiological and evolutionary considerations ." *Anthropological Theory* 2.3 (2002): 323-339.

Gifford, Robert & Sussman, Reuven . (2012). *Environmental Attitude*. *The Handbook of the Environmental and Conservation Psychology*. Retrieved from <http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199733026.001.0001/oxfordhb-9780199733026-e-4?rskey=iDunuP&result=1>

Glanz, K., Rimer B.K, Viswanath K, eds. (2008). *Health Behavior and Health Education: Theory, Research, and Practice (4th ed)*. San Francisco: Jossey-Bass

Haberlein, A. Th. (n.d). *Environmental Attitude*. College of Agriculture and Life, University of Wisconsin. Retrieved from <http://dces.wisc.edu/wpcontent/uploads/sites/30/2013/08/EnvironmentalAttitudes.pdf> .



Hadfield, L. (2009). *Environmental Ethics and Justice*, edited by Estelle L. Weber. Oxford, United Kingdom: Inter-Disciplinary Press

Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *Journal of Environmental Education*, 18(2), 1-8.

Hoffman, B. (2015). The 5 most powerful self-beliefs that ignite human behavior. <https://www.elsevier.com/connect/the-5-most-powerful-self-beliefs-that-ignite-human-behavior>. Retrieved, July 28, 2016.

Internet Encyclopedia of Philosophy. (n.d). Environmental Ethics. Retrieved from <http://www.iep.utm.edu/envi-eth/>

Jackson, E.J., Pang, M.F., Brown, E., Cain S., Dingle, C.E., & Bonebrake, T.C. (2016). Environmental Attitudes and Behaviors Among Secondary Students in Hong Kong. Published in *International Journal of Comparative Education and Development*, 2016, Vol. 18 n. 2, p. 70-80

Jarreau, B. (2014). The Psychology of Environmental Behavior that You're Ignoring in Your Writing. [http://www.scilogs.com/from\\_the\\_lab\\_bench/the-psychology-of-environmental-behavior-that-youre-ignoring-in-your-writing/](http://www.scilogs.com/from_the_lab_bench/the-psychology-of-environmental-behavior-that-youre-ignoring-in-your-writing/).

Johansson, U. (2012). *Toward A Bio-centric Attitude in Environmental Education*. Master Thesis, Linnéuniversitet.

Kaiser, G. Florian, R., Michael, H.P, & Bowler A. P. (1999). Ecological Behavior, Environmental Attitude and Feeling of Responsibility for the Environment. *Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, University of California, Berkeley, USA, Uppsala University, Sweden, University of California, Irvine, USA. European Psychologist*, Vol. 4, No. 2, June 1999. Hogrefe & Huber Publishers

Kaiser, G. Florian, R., Michael, H. P. & Doka, G. (2003). Ecological Behavior and Its Environmental Consequences: *a life cycle assessment of a self-report measure*. Department of Technology Management, Eindhoven University of Technology, Eindhoven, The Netherlands, Doka Environmental-Life-Cycle-Assessments, Zurich, Switzerland, School of Public Health, Harvard University, Boston, MA, USA, Graduate School of Education, University of California, Berkeley, CA, USA *Journal of Environmental Psychology* 23 (2003) 11–20.

Kecmanovic, D. (1969). The paranoid attitude as the common form of social behavior. *Sociologija*, 11(4), 573-585. Retrieved from <http://search.proquest.com/docview/60877639?accountid=12347> (registration required)

Kortenkamp, V. K. & Moore, F. C. (2001), University of Wisconsin, Madison. Retrieved from <http://psych.wisc.edu/moore/PDFsMyPapers/Kortenkamp%26Moore2001.pdf>

Maloney, M. P., & Ward, M. P. (1973). Ecology: Let's hear it from the people – An objective scale for measurement of ecological attitudes and knowledge. *American Psychologist*, 28, 583-586.

Marianne, H, Universidad Católica de Chile, Emilio, M. Díaz, Universidad de Talca, Chile, and Luis, C. Universidad Católica de Chile, Chile (2013). Environmental attitudes and behaviors of college students: a case study conducted at a chilean university. Retrieved from [http://www.scielo.org.co/scielo.php?script=sci\\_arttext&pid=S0120-05342013000300013](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-05342013000300013). doi: 10.14349/rlp.v45i3.1489

Mifsud, C. M. (2012). A Meta-Analysis of Global Youth Environmental Knowledge, Attitude and Behaviors. University of Malta, Msida, Malta. Retrieved from <http://files.eric.ed.gov/fulltext/ED532920.pdf>

Milfont, L. T. & John D. J. (2006). Preservation and Utilization: Understanding the Structure of Environmental Attitudes. University of Auckland, New Zealand. Federal University of Alagoas, Brazil. University of Auckland, New Zealand

Mondal, P. (n.d). Effects of Population Growth on Environment. Retrieved from <http://www.yourarticlelibrary>

Montague, P. (2012). Why is The Environmental Movement not Winning. Retrieved from [http://www.huffingtonpost.com/peter-montague/green-initiatives\\_b\\_1301418.html](http://www.huffingtonpost.com/peter-montague/green-initiatives_b_1301418.html)

Nalukenge, H. (2009). Environmental Ethics is Key to Sustainability in a Contemporary Society. United Kingdom: The Inter-Disciplinary Press

National Park Service. (n.d). Conservation VS Preservation and National Park Service. Retrieved from <https://www.nps.gov/klgo/learn/education/classrooms/conservation-vs-preservation.htm>

O'Brien, M. R. & Pease, L.J. (2007). Environmental Literacy: Knowledge and Attitude of IOWA State University Students, Published in Environmental Education Research Journal. Retrieved from <http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=16054&context=rtd>

Olufemi, C. A., Mji, A., & Mukhola, S.M. (2014). Assesment of Secondary Students' Awareness Knowledge and Attitudes toward Environmental Pollution Issues in the Mining Regions of South Africa: Implications for Instruction and Learning. Published in

Environmental Education Research Journal. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/13504622.2014.984162?journalCode=ceer20>

Oskamp, S. (2000). A sustainable future for humanity? How can psychology help? *American Psychologist*, 55, 496-508.

Planas, F.. (n.d) "The Exploitation of Natural Resources". *Un An Pour La Planete*. Retrieved 6 April, 2017

Pierce, J. C., & Lovrich, N. P. (1980). Belief systems concerning the environment: The general public, attentive publics, and state legislators. *Political Behavior*, 2, 259-286.

Poortinga, W., S.L., & Vlek, C. (2002). Environmental risk concern and preferences for energy-saving measures. *Environment and Behavior*, 34, 455-478.

Racelis, A. R. (2009). Relationship between Employee Perceptions of Corporate Ethics and Organizational Culture: An Exploratory Study. *College of Business Administration, University of the Philippines, Philippines*.

Roach, M. C. (2003). *Mother/Nature: Popular Culture and Environmental Ethics*. Bloomington & Indianapolis: Indiana University Press.

Rowe, S. J. (1994). "Eco-centrism: the Chord that Harmonizes Humans and Earth." *The Trumpeter* 11(2): 106-107..

Sadik, F. & Sadik, S. (2014). A Study on Environmental Knowledge and Attitudes of Teacher Candidates. Published in *Procedia-Social and Behavioral Science Journal*, Vol. 116, pp, 2379-2385. Retrieved from <http://www.sciencedirect.com/science/article/pii/S1877042814005941>. DOI: 10.1016/j.sbspro.2014.01.577

Sarkar, M. (2011). Secondary Students' Environmental Attitude: The Case of Environmental Education in Bangladesh. Published in *International Journal of Academic Research in*

Sawitri, R. D., Hadiyanto, H & Hadi, P. S. (2014). Pro-Environmental Behavior from a Social Cognitive Theory Perspective. *Procedia Environmental Science Journal*. <http://www.sciencedirect.com>. Retrieved, July 27, 2016.

Schinkel, A. (2009). *State Neutrality and Compulsory Environmental Education. Environmental Ethics: Sustainability and Education*. Oxford, United Kingdom: Inter-Disciplinary Press

Schultz, P. W., Shriver, C., Tabanico, J. J., & Khazian, A. M. (2004). Implicit connections with nature. *Journal of Environmental Psychology*, 24, 31-42.

Spilka, B., & McIntosh, D. N. (1996). *The psychology of religion*. Westview Press.

Spirkin, A. (2016). Man in The Realm of Nature, in the Dialectical Materialism. Retrieved from <https://www.marxists.org/reference/archive/spirkin/works/dialectical-materialism/ch05-s03.html>

Stern, P. C., Dietz, T., Kalof, L., & Guagnano, G. A. (1995). Values, beliefs, and proenvironmental action: Attitude formation toward emergent attitude objects. *Journal of Applied Social Psychology*, 25, 1611-1636.

Tangney, J. P., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annual Review of Psychology*, 58, 345.

Thompson, S. C. G., & Barton, M. A. (1994). Ecocentric and anthropocentric attitudes toward the environment. *Journal of Environmental Psychology*, 14, 149-157.

Triandis, H. C. (1994). *Culture and social behavior*. New York: McGraw-Hill Book Company

Tylor, E.B. (1986). *Primitive culture: researches into the development of mythology, philosophy, religion, art, and custom*. Retrieved from <http://www.oocities.org/mravikiran/culsoc.html>

Ugulu, Iker, Sahin, M, and Basla, S. (2013). High School Students' Environmental Attitude: Scale Development and Validation. Retrieved from <http://krepublishers.com/02-Journals/IJES/IJES-05-0-000-13-Web/IJES-05-4-000-13-ABST-PDF/IJES-05-4-000-13-ABST-PDF/IJES-05-4-415-13-245-Ugulu-I/IJES-05-4-415-13-245-Ugulu-I-Tt.pdf>

Vlek, C. & Steg, L. (2007). Human behavior and Environmental Sustainability: Problems, Driving Force, and Research Topics, in *Journal of Social issues* 63 (1), 1-19, University of Groningen

Weber, L. E. (2009). *Indigenous Land Management in a Modern World: A Case Study from Papua New Guinea*. Environmental Ethics: Sustainability and Education. Oxford, United Kingdom: Inter-Disciplinary Press

White, L. (2008). *The Historical Roots of Our Ecological Crisis*. Edited by Louis Podjman. Belmont, CA: Thomson Wadsworth

WHO. (2016). *Climate Change and Health, Fact Sheets*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs266/en/>

Wilson, E.O. (1975). "Man: From Sociobiology to Sociology" in *Sociobiology*. Cambridge, MA: Harvard University Press

Wright, R. (1994). *The Moral Animal Why We Are The Way We Are: The New Science Of Evolutionary Psychology*. New York, NY: Vintage Books.

WYER, R. S. J. (1965). Effect of child-rearing attitudes and behavior on children S responses to hypothetical social situations. *Journal of Personality and Social Psychology*, 2(4), 480-486.

