



The impact of personality on climate change action among individuals- A literature review

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Abstract

Climate change is a challenging phenomena worldwide, with potential implications for ecosystems, economies and societies (Hindustan times, 2023). According to a recent news article, more than half the world's oceans have changed colour. The article read the oceans near the equator are turning green over time. This highlights the changes in the ecosystems within the surface oceans. This paper highlights the impact of personality on climate change action among individuals. The study is a reflection of past researches on the topic. The reviews listed on the paper on the topic imply a strong correlation between personality traits and pro-environmental behaviours. Specifically, the studies listed above emphasise an association between the big five personality traits and pro-environmental behaviour among individuals. Further, one study also implies on ways to enhance pro-environmental behaviour by offering programmes to enhance environmental awareness and develop a more pro-ecological view.

Keywords: Climate change, personality traits, pro-environmental behaviour

Introduction

Definition of Global Warming

Climate change can be defined as "long term shifts in temperature and rainfall over a long period of time." (United Nations, 2023). This change can be natural or through man-made activity. One important man-made contribution to climate is Green House Effect.

Greenhouse Effect

The Green House effect can be defined as "a process that occurs when gases in earth's atmosphere trap the sun's heat." The Green House effect makes the earth a hotter planet for species to exist. (National grid).

Causes of Climate Change

Although climate change is a natural phenomena that is caused by various factors, human activities play a major role in contributing towards climate change especially in the in the recent years. Some of the activities which commonly contribute towards climate change is burning of fossil fuels such as natural gas, coal, oil and Gasoline. (Natural resources development council, 2021).

The potential way through which human activities contributes to climate change is is human development. Scientists have proven in their research that logging and development lead to destroying forests, wet lands and other carbon sinks.

Following are the various human causes of climate change:

Generating Power

Electricity is generated from large scale burning of fossil fuels such as natural gas, coal, and oil. This process contributes a major source of carbon emissions. Most of the electricity comes from burning fossil fuels and only a quarter of electricity is generated from wind, solar and other renewable sources.

Manufacturing Goods

Industries burn fossil fuels on a large scale to produce various goods such as electricity, plastics, iron, steel,

electronics, clothes, and other goods. Mining industries include processes that affect the climate.

Cutting Down Forests

Forest areas are occupied for various purposes. One such purpose is construction of buildings that present as huge multi storied apartments and offices. When trees in the forests are cut for various benefits such as making beauty products, medicines, paper etc they release carbon they have been storing. Forests absorb the carbon released and hence cutting them can keep the carbon within the atmosphere contributing to greenhouse effect.

Using Transportation

Use of personal cars and bikes pave a long way to polluting the environment. Vehicles release gases as a by-product of combustion process. One such gas released by them is Carbon dioxide which is also called a greenhouse gas. Apart from CO₂, the other gases released by these vehicles include Carbon monoxide, Nitrogen Oxides, Particulate matter and Volatile Organic Compounds.

Producing Food

Food can be produced by generating energy to make farm equipment or fishing boats to function. This energy is generated by burning of fossil fuels. Similarly, in order to cultivate crops, emissions are produced while using fertilizers and manure. A class of ruminant livestock such as cattle, sheep and goats secrete microbes in their rumen. These microbes are called methanogens.

Consuming too much

Consumption of too much of resources, including electricity can contribute to greenhouse gas emissions. More electricity usage demands on more burning of fossil fuels. (United Nations report) Although, people are aware of the basic information and their responsibilities towards climate change, individuals show varied reactions to the concept of climate change. One such reaction expressed by individuals

is Eco-guilt There are various factors that determine an individual's subjective response to climate change. A predominant determinant of emotional expressions is Personality.

Personality

Definition of Personality

Personality can be defined as "the enduring characteristics and behaviours that determine a person's unique adjustment to life, including major traits, interests, drives, values, self-concept, abilities and emotional patterns (APA, 2023) Individuals who are concerned about the environment and its protection are called Conservationists. They possess a type of intelligence called Naturalistic Intelligence. According to Gardener, Naturalistic intelligence is defined as the ability to identify, classify and manipulate elements of the environment, objects, animals and plants (Howard Gardener, 1983).

Definition of Conservationists

A conservationist is an individual who works in the protection of natural resources, ecosystem and biodiversity. (Environmental science, 2021).

Types of Conservationists

There are four types of conservationists, namely Environmental conservationist,

- **Environmental Conservationist**

An environmental conservationist is an individual who works towards protecting the environment from destruction by promoting eco friendly practices, namely sustainable agriculture.

- **Animal Conservationist**

An animal conservationist works in the protection of animals from unhealthy human activities. They encourage healthy breeding of rare species to prevent their extinction on the planet.

- **Marine conservationist**

A marine conservationist works towards the protection of oceans, seas and aquatic plants and animals from extinction. They focus on various issues such as overfishing and dumping plastics on seas and oceans.

- **Human Conservationist**

A human conservationist has a major role in empowering individuals with ways to protect the environment by teaching sustainable lifestyle practices which include ways of eating and maintenance.

Personality Traits of a Conservationist

A Conservative personality has all the traits mentioned in the Big five personality theory. Following are the personality traits of a conservationist personality:

- **Openness**

A Conservationist type of personality is always open to new experiences and information's related to the environment. They are willing adopt suggestions related to their ideas.

- **Conscientiousness**

Conservationists are aware of the right and wrong ways of environmental behaviour. They adopt effective

conservation strategies instead of contributing to environmental pollution and degradation.

- **Extroversion**

A conservationist is able to influence people to adopt environmental friendly behaviours through healthy social contacts.

- **Agreeableness**

Conservationists are more concerned of social harmony. They believe in the environmental welfare than an individual's self-serving interests.

- **Neuroticism**

Conservationists tend to experience strong negative emotions concerning environmental issues such as climate change. They experience heightened sense of anxiety and worry while reading widespread destruction of natural resources all over the world. (Walden University, 2015).

Need For the Study

The present study aims was undertaken to understand the individual differences in the perception and response towards environmental issues such as climate change. Understanding the difference enables the researcher to know why some people are more inclined to take actions against climate while others are not motivated. Also, the researcher is able to identify the potential barriers in people's engagement towards climate change and work on enhancing awareness among the public toward the cause by developing effective intervention strategies.

Review of Literature

This chapter deals with various researches published on the above topic:

Studies on personality and climate change action

A study was conducted by Stephan (2023) on the impact of compassion towards others sufferings on pre-environmental tendencies. The researcher believed that compassionate feelings must foster pre-environmental tendencies as compassion produces moral actions and judgements across different moral domains, including environment. He divided his study into two parts. In study 1, the researcher collected three independent samples and various measures of pre-environmental tendencies from a population of 2097 adults. The results of study 1 revealed that compassion correlated positively with pro-environmental values, pro-environmental intentions and reports of donations to environment. In study 2, the researcher experimented to test the association between compassion for humans and pro-environmental intentions. The researcher concluded the study by describing the implications of the study.

A study was conducted by Tara (2015) on personality traits associated with environmental concern. The researcher adopted the Big five personality theory as a model for his study. The purpose of the study was to ascertain the relationship between the big five personality traits and pro-environmental behaviours of individuals. The researcher collected data for his study from 100 participants through an online participant survey. The survey included questions from three different scales, namely, Environmental Concern scale, General Ecological behaviour scale and the self-reported pro-environment behaviour scale. The researcher used bivariate correlation and regression analysis to

ascertain the association between personality traits and pro-environmental attitudes and behaviour. The researcher found from the study that the traits openness and agreeableness correlate positively with pro-environmental attitudes and behaviour.

A study was conducted to ascertain the association between HEXACO personality traits and climate change action, pro-environmental behaviours and moral anger by Angello, Valleira, Camellia *et al* (2023). The researchers collected data for their study from a sample of 268 community participants. The results of Hierarchical tests concluded that Openness to experience functioned more effectively than HEXACO personality traits in determining climate change action. Also, Openness to experience and Honesty-Humility functioned more effectively than HEXACO traits in determining pro-environmental behaviours. Openness to experience was associated with climate change action both directly and indirectly through moral anger. Similarly, Openness to experience and Honesty-Humility was associated with pro-environmental behaviour both directly and indirectly through moral anger.

A study was conducted to ascertain the relationship between personality traits and pro-environmental behaviours by Mareila, Anna (2023). The researchers found that Honesty, Agreeableness, Openness, Proactive personality and pro-environmental attitude ascertain environmental behaviour. Further, it is found from the study that it implies environmental behaviour can be improved by programmes which focus on increasing environmental awareness and developing a more pro-ecological view.

Overview

The above reviews on the topic imply a strong correlation between personality traits and pro-environmental behaviours. Specifically, the studies listed above emphasise the association between the big five personality traits and pro-environmental behaviour among individuals. Further, one study also implies on ways to enhance pro-environmental behaviour by offering programmes to enhance environmental awareness and develop a more pro-ecological view.

Research Methodology

This chapter analyzes the aim, hypothesis, tools used and results from a secondary source of information.

1. Aim

The purpose of the study is to study the association between openness, conscientiousness, extraversion, agreeableness and neuroticism with environmental attitudes and behaviours.

2. Method of Data Analysis

The data for the study was analyzed using using descriptive and inferential statistics. The participants indicated their response to the scales based on the following demographic variables- gender, age and education.

3. Research Questions

The researcher developed two research questions upon which he constructed the entire framework of study:

1. Does the big five personality traits correlate with the pro-environmental attitudes and behaviours?
2. What are the big five personality traits that are associated with pro-environmental attitudes and behaviour in multiple regression?

Tools Used For the Study

Big five inventory, Environmental concern scale, General ecological Behaviour scale and Self-reported pro-environmental behaviour scale.

Results

Table 1: Shows the mean, standard deviation and Number of participants for traits measured on BFI.

TRAIT	M	SD	N
Openness	3.84	0.61	98
Conscientiousness	4.06	0.62	98
Extraversion	3.43	0.55	97
Agreeableness	4.01	0.57	98
Neuroticism	2.67	0.80	98

From the above table, it can be observed that there is a range of scores for the trait of openness from 1.9 to 5.0. The mean score for the trait of openness is found to be 3.84 and a standard deviation of 0.61 is found. There is a range of scores from 2.11 to 5.00 for the trait of conscientiousness. The mean score for the trait of conscientiousness is found to be 4.06 and a standard deviation of 0.62 is found. The scores of extraversion ranged from 2.13 to 4.89. The mean score for the trait was observed to be 3.43 and a standard deviation of 0.55 is found. The scores of Agreeableness ranged from 2.56 to 5.00. The mean score for the trait was found to be 4.01 and a standard deviation of 0.57 is observed. Similarly, the range of scores for Neuroticism is from 1.13 to 4.75. The mean score for the trait was found to be 2.67 and a standard deviation of 0.8 is observed.

Table 2: Shows the means of the environmental measures, the standard deviations of these measures and the number of participants that completed these measures

MEASURE	M	SD	N
General Environmental Behaviour	0.57	0.12	97
Environmental concern scale	2.84	0.56	96
Self-reported Environmental Concern scale	3.30	0.90	98

From the above table, it can be observed that the range of scores for General environmental Behaviour scale is from 0.35 to 0.83. The mean and SD scores for the scales are found to be 0.57 and 0.12 with the highest score to be 5. The range of scores for the Environmental concern scale is found to be from 1.5 to 3.94. The mean and SD scores for the scale are found to be 2.84 and 0.56 with the highest score being 5. Similarly, the range of scores for Self-reported Environmental concern scale is from 1 to 5. The mean and SD scores are 3.3 and 0.9 with 5 being the highest score.

Table 3: Shows the correlations between Personality traits and pro-environmental attitudes and behaviour.

General Environmental Behaviour scale	Self-reported Ecological Concern scale
n= 95	
Openness	0.31** 0.36** 0.41**
Conscientiousness	0.08 0.03 0.15
Extraversion	0.14 -0.05 0.16
Agreeableness	0.13 0.17 0.26**
Neuroticism	-0.15 0.06 -0.20

** SIGNIFICANT AT 0.02 LEVEL (TWO-TAILED)

Summary and Conclusions

Summary

The present study is conducted to analyze various literatures on the impact of personality on climate change. The paper briefly presents a definition of climate change and the various man-made causes of climate change. These man-made activities are a significant producer of various greenhouse gases. The study serves a specific purpose in terms of understanding the individual differences in the perception and response towards environmental issues such as climate change. This enables the researcher to know why some people are more inclined to take actions against climate while others are not motivated. Also, through the study, the researcher is able to identify the potential barriers in people's engagement towards climate change and work on enhancing awareness among the public toward the cause by developing effective intervention strategies. The data for this study was collected from secondary sources, which are past researches on the topic.

Conclusions

From the above study, it can be concluded that personality serves an important role in guiding people towards pro-environmental behaviours. A class of individuals called Conservationists are more concerned about environmental issues. They possess certain personality traits, specifically, the Big five personality traits, such as, Openness, Conscientiousness, extraversion, agreeableness and neuroticism. Studies prove a strong association between these traits and pro-environmental behaviours.

Limitations

There are two major limitations to the study, namely: The study is conceptual and hence has no empirical data. It does not involve collecting primary data from participants. Instead, it relies on existing literature, theoretical frameworks, and expert opinions. This means that the study does not have firsthand data to generalize the findings. The study has limited in-depth analysis when compared to an empirical study on the concept.

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