British Journal of Multidisciplinary and Advanced Studies:
Environmental Sciences 5(1),1-20, 2024
Print ISSN: 2517-276X
Online ISSN: 2517-2778
Website: https://bjmas.org/index.php/bjmas/index
Published by the European Centre for Research Training and Development UK

Influence of Connectedness to Nature and Environmental Identity On Pro-Environmental Behaviour Among Youths

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doi: https://doi.org/10.37745/bjmas.2022.0412 Published January 31, 2024

Citation: Bankole E.T. and Adesina B.V. (2024) Influence of Connectedness to Nature and Environmental Identity On Pro-Environmental Behaviour Among Youths, *British Journal of Multidisciplinary and Advanced Studies*: Earth Sciences 5(1),1-20

ABSTRACT: *This study investigated the influence of connectedness to nature and environmental identity on pro-environmental behaviour among youths. Three instruments were used in this study, they are: Pro-environmental Behavior Scale (PEBS), Connectedness to Nature Scale (CNS), and Environmental Identity Scale. Two hundred undergraduates were selected using a Convenience Sampling method. Four hypotheses were tested using regression, independent T-test. Result showed that connectedness to nature β= .30, t= 4.40, p<.01 and environmental identity β= .25, t= 3.66, p<.01 independently predict pro-environmental behaviour. Connectedness to nature and environmental identity jointly predict pro-environmental behaviour; there is no significant sex difference in pro-environmental behavior t(198)= .542, p>.05. There is no significant difference in pro-environmental behavior between rural and urban residents t(198)= 1.646,p>.05. Findings of the study were discussed in line with extant literatures. It was concluded that connectedness to nature and environmental identity are positive integers to pro-environmental behaviours.*
KEYWORDS: connectedness to nature, environmental identity, pro-environmental behaviour, youths.

INTRODUCTION

Human behavior is commonly accepted as a major contributor to various environmental issues including climate change, environmental pollution, and the loss of biodiversity (Swim, Clayton, & Howard, 2011; Wynes & Nicholas, 2017). The environment is one of the most important components for mankind. Interactions between humans and environment that occur continuously, will affect human behavior on the environment. The way humans treat their environment will have an impact on the quality of human life itself (Mustapa, Maliki, & Hamzah, (2018). It encourages people today to change their behavior in an effort to reduce the harmful effects of environmental damage (Gifford, R., & Nilsson, A., 2014). Our current generation has changed the ecosystem

faster and more exhaustively than any other generation before, proving that behavioral change is required for a sustainable future.

Pro-environmental behavior (PEB) encompasses a variety of different actions that individuals take to either minimize environmental harm or to help actively restore the environment. According to (Steg & Vlek, 2007), pro-environmental behavior has six indicators; (1) energy conservation, (2) mobility and transportation, (3) waste avoidance, (4) recycling, (5) consumerism, and (6) vicarious behaviors toward conservation. These six indicators can be used to measure the pro-environmental behavior of each individual. Many psychological factors influence pro-environmental behavior, e.g., risk-perception, self-efficacy, norms and values. Yet, there is one factor that stands out for theoretical and practical reasons: emotional connectedness to nature. Numerous studies have identified emotional connectedness to nature as an important predictor of pro-environmental behavior in childhood, adolescence and adulthood.

The various determinants of pro-environmental behavior can be classified into four major types:

1. Socio-demographic Factors (Personal Capabilities) (Blankenberg, Ann-Kathrin & Alhusen, Harm, 2019)
2. Attitudinal (Psychological) Factors
3. Habits
4. Contextual Factors (Individual, Social and Institutional)

Contextual Factors

Beside the above presented determinants, other contextual factors like individual, social and institutional determinants are likely to influence human behavior.

i. Social Factors (peers): Individuals do not behave like monads. Following e.g. certain norms is related to peers, given that people searching for conformity, trying to avoid social disapproval or wish social approval of others (Farrow et al., 2017).

i. Individual Factors: One of the individual factors is an individual's connection to nature (CN). Connection to Nature describes the subjective connection of an individual to nature (Zelenski & Nisbet, 2014) and this connection affects (environmental) attitudes and values, and also strongly impacts ecological behavior and SWB (Mayer & Frantz, 2004). People associating themselves with nature are also more likely to possess environmental concern (Schultz et al., 2004).

ii. Institutional Factors: One further factor, also interacting as well as displaying certain norms, are the institutional factors. While policy-makers emphasize the role of laws and embrace them, the effects of these on PEB have still not been conclusively analyzed. Specific policies could be helpful in the promotion of recycling behavior (Kirakozian, 2016) and even the advice and threat of sanction increase cooperation (waste management) in the beginning, but the effect disappears as soon as the sanction is applied (Festr´e et al., 2017).

Print ISSN: 2517-276X
Online ISSN: 2517-2778
Website: https://bjmas.org/index.php/bjmas/index
Published by the European Centre for Research Training and Development UK

Connectedness to Nature and Pro-Environmental Behavior

Connections with nature are an important foundation of one's environmental behavior, and are latent and relatively stable across time and situation. Further, it examines the relationship between human and nature on an individual level. The concept of connections with nature has been interpreted in different ways. It was defined by Schultz as the extent to which an individual includes nature within his/her cognitive representation of self (Schultz, P. W., 2000). Mayer and Frantz (2004) viewed connectedness in a different light, as they defined it as an individual's affective and experiential (rather than cognitive) connection to the natural world. Perrin and Benassi (2009) suggested that connectedness with nature is an individual's beliefs and attitudes about their connection to nature, not mere affective connection. Based on previous studies, we use the term connectedness with nature to refer to a factor underlying attitudes towards environmental issues

Connectedness to nature is the extent to which people view themselves as a part of nature (Schultz, 2002). As an underlying factor for environmental behavior, connections with nature can be examined both explicitly and implicitly. Explicit, in which the individual acknowledges and is able to express the connection; and implicit, which is a non-conscious connection inexpressible to others (Schultz & Tabanico, 2007). In his biophilia hypothesis, Wilson (2017) suggested that people's emotional relationship with nature may motivate them to act in environmentally protective ways. Therefore, people's emotional relationship with nature has been studied as a determinant of engagement in pro-environmental behaviors through the construct of connectedness to nature.

Both methods of evaluation have predictive potency for certain contents, and the extent to which they can effectively predict behavior depends on moderator variables, such as opportunity to control, motivation to control, and process reliance. Overall, implicit measures will have a higher predictive validity only if individuals rely mostly on automatic processes to guide their behavior and have low opportunity or motivation to control their behavior. On the other hand, explicit measures are supposed to predict behaviors when individuals rely more on controlled processes for behavior determination. Behaviors vary on a continuum based on the amount of control one exercises, and can be generally classified into two types: deliberate and spontaneous behaviors: deliberate behaviors are mainly self-report testing proxies of behavior, such as behavioral intentions and judgments, whereas measures of spontaneous behaviors are mainly experimental methods.

Environmental Identity and Pro-Environmental Behavior

Another construct that reflects some part of human nature relations is environmental identity (Clayton, 2003), which is defined as one part of the way in which people form their self-concept; a sense of connection to some parts of the nonhuman natural environment, based on history, emotional attachment, and/or similarity, that affects the way in which we perceive and act towards the world; a belief that the environment is important to us and an important part of who we are.

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(Clayton, 2003). This connection affects the ways in which one perceives and acts toward the world and within social interactions. Ultimately, environmental identity is a belief that the environment is important to an individual and is an important part of who that person is and affects how one acts upon the world (Clayton, 2003). Identity is malleable over time, connected to practice, informed by social interactions, and can be impacted by educational experiences (Gee, 2000; Riggs Stapleton, 2015).

Environmental identity is a socially constructed self-concept that is based on the connection and interdependence with the natural world (Clayton & Opotow, 2003; Stets & Biga, 2003). Environmental identity has both social and environmental influences and it can have behavioral implications across situations and contexts (Stets & Biga, 2003). For example, a stronger environmental identity can predict pro-environmental attitudes and behaviors and is also associated with a desire for animal rights (Clayton, Fraser & Burgess, 2011). Environmental identities are inherently social because identity depends on a common social meaning and understanding of what nature is and how it is to be "revered, reviled, or utilized" (Clayton, 2003). According to Clayton (2003), social variables actually affect how much one is able to focus on the natural environment and how one interprets what is seen. Environmental identity is also influenced by social interactions. For instance, Clayton and Opotow (2003) mention that environmental identities are influenced by social factors including group membership and other social categories such as political party, values, ideology and in turn affect activism behavior in the form of voting and other activism behaviors.

As highlighted by Clayton (2003), and Stets & Biga (2003), identity can play a greater role in influencing behavior than attitudes and worldview. In comparison to attitude theory, identity theory incorporates the social structure of behavior as well as the fact that individuals have multiple identities and roles and positions in a complex society (Stets & Biga, 2003). According to Clayton (2003), having an environmental identity makes one more conscious of one's membership to a "collective, interdependent system, including natural ecosystems." Through this understanding, one recognizes the significance of non-human members of the environment and that non-human rights are limited and ultimately influenced by human actions and behaviors (Clayton, 2003). Clayton (2003) believes environmental identity is a motivating force for individuals to act in ways that protect the environment and in turn their identities will guide social, political, and personal behavior.

Environmental identity can help explain the environmental actions and pro-environmental behaviors individuals choose to participate in (Stets & Biga, 2003). Action, choice, and behavior are all part of one's environmental identity (Thomashow, 1995; Clayton, 2003; Blatt, 2013). Clayton (2003) claims that an environmental identity can influence the actions and behaviors one takes in the social, personal, and political spheres (Thomashow, 1995; Zavestoski, 2003; Blatt, 2013). Behaviors and identities can influence each other in a complex, dialogical manner. The

relationship is reciprocal, behaviors can influence identity and identity can influence behavior (Blatt, 2013). According to Clayton (2003), an environmental identity can be nurtured and used to encourage conservation behavior when the natural objects being protected are somehow tied to the self. This influence and relationship between environmental identity and behaviors does not mean that they are linked exclusively. It does mean that one's understanding of the varying levels of salience of various identities within an individual can lead to a firmer understanding of the actions of that individual (Burke, 1980).

Heimlich, Mony, and Yocco (2013) believe pro-environmental behaviors are directed at solving a problem and are determined by those who will carry out the behaviors. In reality, pro-environmental behaviors do not describe an exhaustive set of specific behaviors, but represent a group of behaviors that an individual thinks is environmentally friendly, even though there may be other, more sound environmental behaviors that exist (Heimlich & Harko, 1994). According to Stets and Biga (2003), "identity factors improve our power to predict behavior, because identity theory rests on the important sociological assumption that humans are embedded in a social structure in which behavior is chosen, not on the basis of discrete, personal decisions, but on the basis of competing demands stemming from the many positions one assumes in society". Environmental identity may predict some pro-environmental behaviors. The higher one's environmental identity the stronger likelihood of participating in particular pro-environmental behaviors. This linkage could possibly extend to behaviors that align with more complex environmental behaviors such as becoming an activist for environmental issues (Heimlich et al, 2013).

Statement of the Problem

The long-term good health of populations depends on the continued stability and functioning of the biosphere's ecological and physical systems, often referred to as life-support systems. Populations around the world continually ignore this long-established historical truth at our peril: yet it is all too easy to overlook the dependency of humans on the natural environment, particularly at a time when the human species is becoming increasingly urbanized and distanced from these natural systems. The physical environment is an integral part of this complex of life-supporting processes, one of many large natural systems that are now coming under pressure from the increasing weight of human numbers and economic activities.

This geometric increase in population and economic activities that impact negatively on the environment have been argued to result in the ongoing destruction of the natural environment and degradation of planetary living systems which is fast reaching catastrophic proportions, largely as a result of increasing human impact on vulnerable ecosystems and dwindling natural resources (Dietz, Ostrom, & Stern, 2009). Within this context of an apparently worsening global environmental crisis, there has recently been a substantial body of literature examining the nature

of the human relationship and orientation towards the environment and the effects of this on environmental ethics, including indicators of environmental altruism (e.g. Barrable, 2019; Nisbett &, Zelenski, 2023; Nisbett, Zelenski, & Murphy, 2009; Schultz, 2002).

Recently, the media and other sectors of society with massive agenda setting impact has been inundated with reports of and awareness about an ongoing drastic climate change that has led to adverse weather in some part of the world. From the forgoing, there seems to be an urgent need to put in place measures that could help arrest the degradation of the ecosystem with a view to protecting the human race. To this end, this study is poised to investigate the extent to which connectedness to nature which connotes a sense of emotional concern for natural environment and environmental identity will influence individuals to engage in behaviors that are beneficial to the environment.

Objectives of the Study

The following are the objectives of this research:

i. To investigate the influence of connectedness to nature on pro-environmental behavior among youths
ii. To investigate the influence of environmental identity on pro-environmental behavior among youths
iii. To examine the difference in pro-environmental behavior of male and female youths
iv. To examine the effect of location on pro-environmental behavior among youth

Relevance of the Study

The research will help in identifying other factors of pro-environmental behavior. To alter effectively human behavior that contributes to environmental problems we need to understand the drivers of behavior, the study will help provide insight to this. It would be wise to cultivate people's connection with nature, promote the emotional and cognitive tie between humans and the natural world, and increase people's feeling of being one with nature. The study will therefore inspire us to ponder on how to ignite people's passion to protect nature. It will help to better understand the concepts and serve as reference point or guide for future researchers.

Theoretical Framework

The following theories would be used to further explain each of the variables in this research:

Theories of Pro-Environmental Behavior

i. Theory of Planned Behavior

The TPB argues that behaviors stem from individual intention and perceived behavioral control (PBC). Intention, defined as "indicators of how hard people are willing to try to perform the behavior" (Ajzen, 1991), in turn, depends on three direct predictors: attitude, subjective norm, and

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Online ISSN: 2517-2778
Website: https://bjmas.org/index.php/bjmas/index
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PBC. Attitude is defined as an individual's favorable or unfavorable evaluation of the behavior; subjective norm refers to the perceived social pressure towards the behavior; and PBC is the personal assessment of the feasibility of executing the behavior in a given context (Ajzen, 1991). The TPB suggests that the three determinants of intention are influenced by behavioral, normative, and control beliefs, commonly called indirect predictors. Behavioral beliefs refer to the perceived advantages and disadvantages of performing a certain behavior; normative beliefs are "a person's subjective probability that a particular normative referent wants the person to perform a given behavior" (Ajzen, 2012); and control beliefs are related to various factors (time, cost, available infrastructures, etc.) that impede or facilitate a behavior.

ii. **Schwart's Norm Activation Theory**

Schwartz originally proposed the norm activation model in the late 1960s (Schwartz, S. H., 1968) and then made some refinements to this model in a series of articles in the 1970s (Schwartz, S. H., 1970; 1973; 1977). According to the norm activation model, three antecedents of pro-social behavior are: (a) awareness of consequences, (b) ascription of responsibility, and (c) personal norms. The norm activation theory argues that an awareness of potentially harmful consequences and ascription of personal responsibility activate personal norms that control whether a person would act to prevent harmful outcomes. The model is a theory of intervention behaviors which is only applicable when events are already in place that someone believes will lead to harmful effects for others or others and oneself collectively. The rationality of Schwartz's theory revolves around the intensity of the awareness of consequences and acceptance of responsibility components and the content of an individual's norms. The theory argues that as the salience or intensity of awareness of consequences and acceptance of responsibility increases, the likelihood that personal norms will be increasing. If the content of a person's norms prescribes action, then a person will act to prevent the expected harmful consequences.

iii. **Values-Beliefs-Norms Theory**

The values-beliefs-norms theory argues that pro-social 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. The primary differences between the values-beliefs-norms theory and the norm activation theory are that the norm activation theory focuses exclusively on altruistic values or motives whereas the values-beliefs-norms theory includes other values as well, and the values-beliefs-norms theory directly assesses individuals' relevant beliefs. According to the theory, pro-environmental behaviors stem from acceptance of particular personal values, from beliefs that things important to those values are under threat, and from beliefs that actions initiated by the individual can help alleviate the threat and restore the values (Stern, P. C., 1999). The values-beliefs-norms theory adds to Ajzen's causal sequence by demonstrating that environmental beliefs are influenced by personal values (e.g., altruistic values).

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Biophilia Model for Connectedness to Nature

The term "biophilia" was first used by psychoanalyst Erich Fromm as "the passionate love of life and of all that is alive" (Fromm, 1973). Wilson (1986) used a more specific definition, the "innate tendency to focus on life and life-like processes" (Wilson, 1986). This focus on life is proposed to be a psychological and emotional connection that elicits complex behaviors (Kellert & Wilson, 1993).

The biophilia hypothesis posits an innate biological and genetic connection between human and nature, including an emotional dimension to this connection. Biophilic design builds on this hypothesis in an attempt to design human-nature connections into the built environment. Tidball (2012), in their review of the biophilia hypothesis (Kellert & Wilson, 1993), highlights that biophilia consists of two components. Firstly, that humans have an "affinity for other living things", and that this affinity is "rooted in our biology" (Tidball, 2012). The biological connection between humans and nature proposed by the biophilia hypothesis may be biologically present in human genes (Kellert & Wilson, 1993), with such a proposition developed through the idea of biocultural evolution (Lumsden & Wilson, 1985) and adaptive evolution with our ancestral environments (Tooby & Cosmides, 1990). As human evolution occurred through interaction with an environment solely comprised of the natural world, it is proposed that all humans carry a biological-based biophilic tendency (Kellert & Wilson, 1993) or have otherwise been biologically prepared to have biophilic tendencies (Seligman, 1971; Dunlap & Stephens, 2014).

Furthermore, the biological basis of the biophilia hypothesis may be an emanation of the Biological Attraction Principle (Agnati et al., 2009). This principle, introduced in Agnati et al. (2009), suggests that there is an inherent attraction between biological systems, and "this biological attractive force is intrinsic to living organisms and manifests itself through the propensity of any living organism to act, without necessarily any direct contact, on other living organisms" (Agnati et al., 2009).

As discussed above, the body of literature is explicit regarding the biological basis of the biophilia hypothesis. However, some effect of social/cultural mediation is acknowledged. In particular, Soule, in Kellert & Wilson (1993) acknowledges biophilia as being a complex phenomenon, which is inherent in our biology but also affected by social and cultural differences (Kellert & Wilson, 1993). Kahn (1997) also recognizes this aspect of the biophilia hypothesis.

In summary, the biophilia hypothesis forms part of a body of theories that address the relationship between humans and nature. The biophilia hypothesis is considered to have a biological basis. However, it is also argued that behaviors of positive human-nature interactions are partially inherited by natural selection, and partially by learned through cultural evolution (Sideris, 2003; Tidball, 2012).

Print ISSN: 2517-276X
Online ISSN: 2517-2778
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Balance Identity Theory for Environmental Identity

Balanced identity theory was originally formulated as "A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept" (Greenwald et al., 2002). It applies the principles of cognitive-affective consistency theories (e.g., balance theory; cognitive dissonance theory, congruity theory) (Heider, F., 1958; Festinger, L., 1957; Osgood, C. E.; & Tannenbaum, P. H., 1955) to explain the formation and maintenance of an individual's identity. As described by Greenwald et al. (2002), balanced identity theory rests on three assumptions. First, social knowledge which is defined as knowledge of persons (including self), groups, and their attributes (including valence) that can be represented as a network of associations using node (concept) and link (association) diagrams. Second, the self which is a central entity in the associative knowledge structure and is represented as a node that is highly connected in the structure. Third, positive and negative valence which can be represented as nodes in the associative structure, permitting. This unified theory defines identity as the strength of association between self, groups, attributes, and valence. Balance, as suggested through cognitive-affective consistency theories, results when the strength of relationship between two concepts (e.g., self and gender) is commensurate with a third concept (e.g., a positive valence, such as good; or an attribute such as "nurturing"). For instance, in a balanced identity configuration, a person might hold beliefs that "I am female, I am good, and females are good". In an unbalanced configuration, a person might hold beliefs that "I am female, females are nurturing, but I am not nurturing".

Balanced identity theory proposes that when two of the nodes in the triad are linked to a common third node, they share a first-order link. The balance-congruity principle predicts that when two nodes share a common first-order link, the association between them should strengthen. According to the balance-congruity principle, this shared first-order link exerts pressure on the cognitive system toward equal strengths of association. As a result, a person with a strong positive self-nature association, should also show strong positive self-valence associations (self-esteem) and strong positive nature-valence associations (attitudes). The balanced identity theory relationships can be extended to environmental identity by incorporating the concept of connectedness with nature, attitudes towards nature, and self-esteem (Greenwald, et al., 2002).
The following hypotheses were formulated for testing:

i. There will be a significant influence of connectedness to nature on pro-environmental behavior among youths
ii. There will be a significant influence of environmental identity on pro-environmental behavior among youths
iii. There will be a significant difference in pro-environmental behavior of male and female youths
iv. There will be a significant effect of location on pro-environmental behavior among youths

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METHODOLOGY

This research was conducted in Ekiti State University, Ado-Ekiti, Ekiti State.

Research Design

The study utilized a descriptive survey design, using questionnaires to get valid and reliable data in the research.

Sampling Methods

A Convenience Sampling method will be used in this research. This is a type of non-probability sampling that involves the sample being drawn from that part of the population that is close to hand. Two hundred copies of questionnaires will be distributed.

Research Instruments

Questionnaires comprising of four sections were used for this study. Section A measures the demographic characteristics of the respondents (gender and location), Section B measures Pro-Environmental Behavior, Section C measures Connectedness to Nature, Section D measures Environmental Identity.

Pro-Environmental Behavior Scale (PEBS)

The Pro-Environmental Behavior Scale is a 22 item scale with four dimensions developed by Markel (2013) to measure how people choose to minimize the negative impact of their actions on the environment. It is a 5 point Likert scale, ranging from strongly disagree to strongly agree; and all items are directly scored.

It co-efficient alpha for full scale was .76. Co-efficient alphas for the subscales ranged from .62 to .74 (Markel, 2013). Test re-test correlations were strong, demonstrating reliability for scale.

Connectedness to Nature Scale (CNS)

The Connectedness to Nature Scale (CNS) was developed by Mayer & McPherson Frantz (2004) to measure to what degree people feel part of nature. It is a measure of individuals' trait levels of feeling emotionally connected to the natural world in the realm of social and environmental psychology. The CNS was designed to tap an individual's affective, experiential connection to nature. The CNS is a 14 item questionnaire, with scores ranging from 1-5. It is a 5 point likert scale ranging from "strongly disagree to strongly agree". Items 4, 12, 14 are reversely scored while others are directly scored.

Mayer and Frantz conducted five studies when they introduced the CNS. All five studies showed "strong evidence that the CNS is a reliable and valid scale. The original internal consistency was alpha=.72, but after dropping three items that had negative inter-item correlations, the internal consistency raised to alpha=.84. Beery (2013) also confirmed the scale's high internal validity (α=0.84) and its high test-retest reliability (r=0.79).

Environmental Identity Scale (EID-Short Version)
The Environmental Identity Scale was developed by Clayton, S. (2003) to measure individual differences in a stable sense of interdependence and connectedness with nature. It is a 11 item questionnaire with a 7 point likert response format, ranging from "not at all true to completely true".

All items are directly scored. Cronbach's alpha ranged between 0.82 and 0.94. In previous studies conducted with the Environmental Identity Scale, the internal reliability was good. The overall Cronbach's Alpha for the scale was .90 or above.

Procedure for Data Collection

All respondents were Students of Ekiti State University, Ado-Ekiti, Nigeria. Copies of the questionnaire were given to individual subject purposively drawn from various faculties. 200 questionnaires were administered.

Statistical Measure

Data collected from this research was analyzed in relation to the testable hypotheses using Independent t-test for Hypotheses, One Way ANOVA.

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RESULTS

Table 1

Descriptive Table

N = 200	**Range**	**Mean**	**SD**
1. CTN	24-72	46.34	7.87
2. EID	22-105	68.88	14.62
3. PEB	11-78	46.94	12.55
Sex	**Male**	**Female**	
	81	119	
Location	**Rural**	**Urban**	
	93	107	

Table 2

Regression summary table showing influence of connectedness to nature (CTN) and environmental identity (EID) on pro-environmental behavior. The table below tests hypotheses 1 and 2

IV	β	t	R^2	df	F	p
CTN	.30	4.40**		2		
EID	.25	3.66**	.203	197	25.092**	<.01

**p<.01 DV= pro-environmental behavior

Table 2 above showed that connectedness to nature β= .30, t= 4.40, p<.01 and environmental identity β= .25, t= 3.66, p<.01 independently predict pro-environmental behavior. The table further revealed that connectedness to nature and environmental identity jointly predict pro-environmental behavior. Therefore, hypothesis 1 and 2 is supported.

Table 3: Independent t-test summary table showing gender difference in pro-environmental behavior

	Sex	*N*	*Mean*	*SD*	*df*	*t*	*P*
Pro-Envtal behavior	Male	81	47.52	12.67	198	.542	>.05
	Female	119	46.54	12.50			

Table 3 shows that there is no significant sex difference in pro-environmental behavior t(198)= .542, p>.05. This means that male and female respondents do not differ in pro-environmental behavior. Therefore, hypothesis three is not supported.

Table 4: Independent t-test summary table showing influence of location on pro-environmental behavior

	Sex	*N*	*Mean*	*SD*	*df*	*t*	*P*
Pro-Envtal behavior	Rural	93	48.49	13.44	198	1.646	>.05
	Urban	107	45.58	11.60			

Table 4 shows that there is no significant difference in pro-environmental behavior between rural and urban residents t(198)= 1.646,p>.05. This means that rural and urban dwellers do not differ in reported environmental-beneficial behavior. Therefore, hypothesis four is not supported.

DISCUSSION

The present study focuses on investigating the influence of connectedness to nature and environmental identity on pro-environmental behavior among youths. The study aimed to find out the significant influence of connectedness to nature and environmental identity on pro-environmental behavior among youths. Also, to examine the difference in pro-environmental behavior of male and female youths; and effect of location on pro-environmental behavior among youth. Results showed that showed that connectedness to nature and environmental identity independently and jointly predicts pro-environmental behavior, while there is no significant sex and location difference in pro-environmental behavior among youths.

Print ISSN: 2517-276X
Online ISSN: 2517-2778
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Hypothesis one stated that there will be a significant influence of connectedness to nature on pro-environmental behavior among youths. This hypothesis was confirmed based on the result of the regression summary table at level of 0.05 significance. Research on CN has shown that adults with higher CN experience greater wellbeing and trait mindfulness, and are also more likely to engage in more environmental behaviors and appreciative outdoor activities (Fletcher, 2017; Freeman, Waters, Buttery, & Van Heezik, 2019; Ives et al., 2017; Richardson, Passmore, Lumber, Thomas, & Hunt, 2021; Whitburn, Linklater, & Abrahamse, 2020; Wolsko & Lindberg, 2013). Studies with adults has also indicated those who engage in more PEB also show higher levels of nature connection (Chawla & Gould, 2020). Supporting literature by Hinds & Sparks (2008) revealed that participants' attitudes towards, and affective connections with, the environment significantly predicted their intention to engage with nature. Research has similarly demonstrated that individuals' emotional connectedness to the environment is a strong predictor of their PEB (Brügger, Kaiser, & Roczen, 2011; Chawla & Derr, 2012; Cheng & Monroe, 2012; Krettenauer, 2017).

Hypothesis two stated that there will be a significant influence of environmental identity on pro-environmental behavior among youths. This hypothesis was confirmed based on the result of the regression summary table at level of 0.05 significance. Supporting research by Han, Lee and Hwang (2016) found that individuals' awareness of climate change, in and of itself, did not influence their PEB. However, individuals' perceptions of their moral responsibility and accountability for climate change were strong predictors of individuals' PEB. Research has also indicated that parents' own environmental attitudes can also play a substantive role in shaping their children's environmental attitudes. Cheng and Monroe (2012) surveyed a large sample of Florida primary school students about their attitudes toward nature and found that family values strongly contributed to individuals' CN.

Hypothesis three stated that there will be a significant difference in pro-environmental behavior of male and female youths while hypothesis four states that there will be a significant effect of location on pro-environmental behavior among youths. These hypotheses were rejected based on the result of the Independent T-test summary table at level of 0.05 significance. Contradicted by past researches has suggested that living context may play an important role in determining individuals' CN and their PEB (Collado et. al., 2015; Müller, Kals, & Pansa, 2009). For example, past research has demonstrated that individuals living in rural environments tended to display higher levels of CN and PEB in comparison to their urban counterparts (Collado et. al., 2015; Hinds & Sparks, 2008). This may be due, in part, to the frequency of contact with nature that rural individuals experience. Indeed, research has supported this point, showing that individuals living in rural areas tend to have more contact with nature than those living in urban ones (Gifford & Nilsson, 2014). Bunting & Cousins (1985) found that children living in rural environments engaged in significantly more outdoor activities than their urban counterparts. These authors found that the motivation to protect nature was higher in rural children than in urban children. Other

studies have similarly demonstrated the existence of higher pro-environmental attitudes in rural children (Collado et. al., 2013).

Implication to Research and Practice

This study offers an important contribution to efforts aimed at building a better understanding of the linkages between connectedness to nature, environmental identity and pro-environmental behaviour, This will provide useful information to direct future research regarding efforts to increase overall levels of well-being as well as potentially provide direction in the promotion of increases in environmental attitudes that leads to positive pro-environmental behaviours.

CONCLUSION

Overall, the results of the study indicated that both connectedness to nature and environmental values are determinants of engagement in pro-environmental behaviors. Pro-environmental behavior and environmental identity becomes very important, especially among youths, this is because they are the future assets of the nation that will be the policy makers about the environment so that sustainable.

Ultimately, youths are the environmental stewards of the future. By promoting connectedness to nature at a young age, lifelong associations can be established, promoting dedication and pride in taking care of the environment by developing values which affiliate the self with the natural world, and which will help protect future generations and the natural world from extinction. It is therefore critical that research into childhood connectedness to nature, environmental identity and pro-environmental behavior continues, to assist in identifying how best to promote connection across populations, understand what mediating factors affect this connection, and to develop a more comprehensive and applied understanding of our human nature connection.

Future Research

International data have demonstrated that human behavior is the leading contributor to rising temperatures around the globe. As such, it is crucial that psychologists investigate how to motivate individuals of all ages to curtail environmentally unsustainable behaviors, and adopt ecologically sustainable behaviors.

In line with the original hypothesis, which predicted a significant sex difference in pro-environmental behavior, and of which the result showed that male and female respondents do not differ in pro-environmental behavior. Future research ought to investigate the role of gender on individuals' environmental attitudes and pro-environmental behavior. In particular, research ought to explore whether these gender differences persist across other cultures.

Research might also look to clarify whether particular pro-environmental behaviors and attitudes are more susceptible to gender differences than others, which might be attributed to how certain behaviors are framed or culturally understood. Lastly, future research should be used to determine if environmental connected to nature differences fully explain the gender gap in pro-environmental behavior, or whether other moderating factors explain these differences.

The direction of living context differences was in the opposite direction to the project's original hypothesis. This may suggest that other factors, such as the level of available infrastructure in an area, might be more important than the population-based measure of rurality used in this study. Moreover, factors such as the primary occupation or trade in an area (e.g., agriculture and logging) might impact these findings, and should be investigated in future research. Rural living may entail less contact with nature in the modern era. Research has demonstrated that young people living in industrialized nations are spending less time outdoors than the young people of previous generations. Thus, perhaps access to nature is ultimately irrelevant because individuals are not taking advantage of the outdoor opportunities available to them.

REFERENCES

Agnati L. F., Baluška F., Barlow P. W., Guidolin D. (2009). Mosaic, self-similarity logic and biological attraction principles. *Commun. Integrat. Biol. 2*, 552–563. 10.4161/cib.2.6.9644

Ajzen, I. (2012). Martin Fishbein's legacy: The reasoned action approach. *The Annals of the American Academy of Political and Social Science*, *640*(1), 11-27.

Ajzen I. (1999). The theory of planned behavior. *Organizational Behavior and Human Decision Processes; 50:* 179- 211

Barrable, A. (2019). The case for nature connectedness as a distinct goal of early childhood education. *International Journal of Early Childhood Environmental Education*, *6*(2), 59-70.

Blankenberg, A. K., & Alhusen, H. (2019). On the determinants of pro-environmental behavior: A literature review and guide for the empirical economist. *Center for European, Governance, and Economic Development Research (CEGE)*, (350).

Blatt, E. N. (2013). Exploring environmental identity and behavioral change in an environmental science course. *Cultural Studies of Science Education*, *8*, 467-488.

Brügger, A., Kaiser, F. G., & Roczen, N. (2011). One for All? European Psychologist, 16(4), 324– 333. http://doi.org/10.1027/1016-9040/a00003.

Bunting, T. E., & Cousins, L. R. (1985). Environmental dispositions among school-age children: A preliminary investigation. *Environment and Behavior, 17*, 725–768.

Burke, P. J. (1980). The self: Measurement requirements from an interactionist perspective. *Social psychology quarterly*, 18-29.

Chawla, L., & Derr, V. (2012). The Development of Conservation Behaviors in Childhood and Youth. *In The Oxford Handbook of Environmental and Conservation Psychology (pp. 527–555).* Oxford: Oxford University Press.

Cheng, J. C., & Monroe, M. C. (2012). Connection to Nature: Children's Affective Attitude toward Nature. *Environment and Behavior, 44(1),* 31–49. http://doi.org/10.1177/0013916510385082.

Clayton, S. (2003). Environmental identity: A conceptual and an operational definition. *Identity and the natural environment: The psychological significance of nature*,45–65.

Clayton, S., Fraser, J., & Burgess, C. (2011). The role of zoos in fostering environmental identity. *Ecopsychology, 3*(2), 87-96.

Clayton, S., & Opotow, S. (2003). Introduction: Identity and the natural environment. In S. Clayton & S. Opotow (Eds.), *Identity and the natural environment: The psychological significance of nature* (pp.1–24).Cambridge,MA: MIT Press.

Collado, Corraliza, Staats, & Ruiz. (2015). Effect of frequency and mode of contact with nature on children's self-reported ecological behaviors. *Journal of Environmental Psychology, 41(C),* 65- 73.

Dietz, T., Ostrom, E., & Stern, P. (2009). The struggle to govern the commons. *Research and Environmental Management (co-authored with Gerald Midgley), and contributed many book chapters, journal papers and policy briefings. Chris Blackmore, a senior lecturer in Systems and Environment at The Open University, is a founding course team member for the,* 206.

Dunlap A. S., & Stephens D. W. (2014). *Experimental evolution of prepared learning*. Proc. Natl. Acad. Sci. U.S.A. 111, 11750–11755. 10.1073/pnas.1404176111

Farrow, K., Grolleau, G., & Ibanez, L. (2017). Social norms and pro-environmental behavior: a review of the evidence. *Ecological Economics, 140:*1–13.

Festr´e, A., Garrouste, P., Kirakozian, A., Toumi, M., et al. (2017). *The pen is mightier than the sword*: How thirdparty advice or sanction impacts on pro-environmental behavior

Fletcher, R. (2017). Gaming conservation: Nature 2.0 confronts nature-deficit disorder. *Geoforum, 79,* 153-162.

Freeman, C., Waters, D. L., Buttery, Y., & van Heezik, Y. (2019). The impacts of ageing on connection to nature: The varied responses of older adults. *Health & place*, *56*, 24-33.

Fromm, E. (1973). The Anatomy of Human Destructiveness, 1st Edn. New York, NY: Holt, Rinehart and Winston.

Gee, J. P. (2000). Chapter 3: Identity as an analytic lens for research in education. *Review of research in education*, *25*(1), 99-125.

Gifford, R., & Nilsson, A. (2014). Personal and social factors that influence pro-environmental concern and behaviour: A review. *International journal of psychology*, *49*(3), 141-157.

Gifford, R. (2014). Environmental psychology matters. *Annual Review of Psychology; 65:* 541-579.

Print ISSN: 2517-276X
Online ISSN: 2517-2778
Website: https://bjmas.org/index.php/bjmas/index
Published by the European Centre for Research Training and Development UK

Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review, 109,* 3–25.

Heider, F. (1958). The psychology of interpersonal relations. New York: Wiley

Heimlich, J. E. & Harko, A. (1994). Teacher values in teacher recycling. *Environmental Education Research. 13(1),* 21-30.

Heimlich, J. E., Mony, P., & Yocco, V. (2013). Belief to behavior: A vital link. In *International handbook of research on environmental education* (pp. 262-274). Routledge.

Ives, C. D., Giusti, M., Fischer, J., Abson, D. J., Klaniecki, K., Dorninger, C., ... & Von Wehrden, H. (2017). Human–nature connection: a multidisciplinary review. *Current Opinion in Environmental Sustainability*, *26*, 106- 113.

Kahn, P. (1997). Developmental Psychology and the BiophiliaHypothesis: Children's Affiliation with Nature. *Developmental Review, 17(1),* 1-61.

Kellert S. R., & Wilson, E. O. (eds.) (1993). The BiophiliaHypothesis. Washington, DC: Island Press.

Kirakozian, A. (2016). One without the other? Behavioral and incentive policies for household waste management. *Journal of Economic Surveys, 30(3):*526–551.

Krettenauer, T. (2017). Pro-Environmental Behavior and Adolescent Moral Development. *Journal of Research on Adolescence, 27(3),* 581-593.

Mayer, F., & Frantz, C. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology, 24,* 503-515.

Meyer, A. (2015). Does education increase pro-environmental behavior? Evidence from Europe. *Ecological Economics, 116:*108–121.

Müller, M. M., Kals, E., & Pansa, R. (2009). Adolescents' emotional affinity toward nature: A cross-societal study. *Journal of Developmental Processes*, *4*(1), 59-69.

Mustapa, N. D., Maliki, N. Z., Aziz, N. F., & Hamzah, A. (2018). The differences of nature experiences between urban and rural children. *Geografia*, *14*(4).

Nisbet, E. K., & Zelenski, J. M. (2023). Nature relatedness and subjective well-being. In *Encyclopedia of quality of life and well-being research* (pp. 1-9). Cham: Springer International Publishing.

Nisbet, E. K., Zelenski, J. M., & Murphy, S. A. (2009). The nature relatedness scale: Linking individuals' connection with nature to environmental concern and behaviour. *Environment and Behaviour, 41*, 715–740.

Perrin, J. L., & Benassi, V. A. (2009). The connectedness to nature scale: A measure of emotional connection to nature?. *Journal of environmental psychology*, *29*(4), 434-440.

Richardson, M., Passmore, H. A., Lumber, R., Thomas, R., & Hunt, A. (2021). Moments, not minutes: The nature- wellbeing relationship. *International Journal of Wellbeing*, *11*(1).

Riggs Stapleton, S. (2015). Environmental Identity Development through Social Interactions, Action, and Recognition, *The Journal of Environmental Education, 46:2,*94-113, DOI:10.1080/00958964.2014.1000813.

Schultz, P. W. (2002). Inclusion with nature: The psychology of human-nature relations. In: P. Schmuck & W. P. Schultz (Eds.), *Psychology of sustainable development.* Boston, MA: Springer.

Schultz, P. W. (2000). New environmental theories: Empathizing with nature: The effects ofPerspective taking on concern for environmental issues. *Journal of social issues, 56*(3), 391-406.

Schultz, P. W., Shriver, C., Tabanico, J. J., & Khazian, A. M. (2004). Implicit connections with nature. *Journal of environmental psychology, 24*(1), 31-42.

Schultz, P., & Tabanico, J. (2007). Self, identity, and the natural environment: Exploring implicit connections with nature. *Journal of Applied Social Psychology, 37,* 1219-1247. doi:10.1111/j.1559-1816.2007.00210.x

Schwartz, S. H. (1968a). Awareness of consequences and the influence of moral norms on interpersonal behavior. *Sociometry; 31:* 355-369.

Schwartz, S. H. (1968b). Words, deeds, and the perception of consequences and responsibility in action situations. *Journal of Personality and Social Psychology;10:* 232-242.

Schwartz SH. Moral decision making and behavior. In J. Macauley& L. Berkowitz (Eds.), Altruism and helping behavior. New York, NY: Academic Press; 1970, p. 127-141.

Schwartz, S. H. (1973). Normative explanations of helping behavior: A critique, proposal, and empirical test. *Journal of Experimental Social Psychology;9:* 349-364.

Schwartz, S. H. & Howard, J. A. (1982). Helping and cooperation: A self-based motivational model. Cooperation and helping behavior: *Theories and research,* pages 327–353.

Seligman, M. E. (1971). Phobias and preparedness. *Behavior therapy, 2*(3), 307-320.

Sideris, L. (2003). *Environmental ethics, ecological theology, and natural selection: Suffering and responsibility*. Columbia University Press.

Steg, & Vlek. (2009). Encouraging pro-environmental behavior: An integrative review and research agenda. *Journal of Environmental Psychology, 29(3),* 309-317.

Stern, P. C. (2000). Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues, 56(3),* 407-424.

Stets, J. E., & Biga, C. F. (2003). Bringing identity theory into environmental sociology. *Sociological Theory, 21(4),* 398-423.

Swim, J. K., Clayton, S., & Howard, G. S. (2011). Human behavioral contributions to climate change: psychological and contextual drivers. *American Psychologist, 66*(4), 251.

Thomashow, M. (1995). Ecological Identity: Becoming a reflective environmentalist. Cambridge: MIT Press.

Tidball, K. G. (2012). Urgent biophilia: human-nature interactions and biological attractions in disaster resilience. *Ecology and Society, 17*(2).

Tooby J., & Cosmides L. (1990). The past explains the present. *Ethol. Sociobiol. 11,* 375–424. 10.1016/0162-3095(90)90017-Z.

Whitburn, J., Linklater, W., & Abrahamse, W. (2020). Meta-analysis of human connection to nature and pro-environmental behavior. *Conservation Biology, 34*(1), 180-193.

Print ISSN: 2517-276X
Online ISSN: 2517-2778
Website: https://bjmas.org/index.php/bjmas/index
Published by the European Centre for Research Training and Development UK

Wilson, E. O. (2017). Biophilia and the conservation ethic. In *Evolutionary perspectives on environmental problems* (pp. 250-258). Routledge.

Wolsko, C., & Lindberg, K. (2013). Experiencing connection with nature: The matrix of psychological well-being, mindfulness, and outdoor recreation. *Ecopsychology*, *5*(2), 80-91.

Wynes, S., & Nicholas, K. A. (2017). The climate mitigation gap: education and government recommendations miss the most effective individual actions. *Environmental Research Letters*, *12*(7), 074024.